LITEON® Service

Model ID: R22ANUW-M1

Service Manual

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Safety Notice

Any person attempting to service this chassis must familarize with the chassis and be aware of the necessary safety precautions to be used when serving electronic equipment containing high voltage.

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Product Anouncement:

This product is certificated to meet RoHS Directive and Lead-Free produced definition. Using approved critical components only is recommended when the situation to replace defective parts. Vender assumes no liability express or implied, arising out of any unauthorized modification of design or replacing non-RoHS parts. Service providers assume all liability.

Qualified Repairability:

Proper service and repair is important to the safe, reliable operation of all series products. The service providers recommended by vender should being aware of notices listed in this service manual in order to minimize the risk of personal injury when perform service procedures. Furtermore, the possibile existed improper repairing method may damage equipment or products. It is recommended that service engineers should have repairing knowledge, experience, as well as appropriate product training per new model before performing the service procedures.

NOTICE:

- To avoid electrical shocks, the products should be connect to an authorized power cord, and turn off the master power switch each time before removing the AC power cord.
- To prevent the product away from water or explosed in extremely high humility environment.
- To ensure the continued reliability of this product, use only original manufacturer's specified parts.
- To ensure following safty repairing behavior, put the replaced part on the components side of PWBA, not solder side.
- To ensure using a proper screwdriver, follow the torque and force listed in assembly and disassembly procedures to screw and unscrew screws.
- Using Lead-Free solder to well mounted the parts.
- The fusion point of Lead-Free solder requested in the degree of 220°C.

1.1 SCOPE

This document defines the design and performance requirements for an 20/22W inch diagonal , flat panel monitor .The display element shall be a WSXGA (1680x1050) resolution TFT-LCD (Thin Film Transistor Liquid Crystal Display).16.7M color(RGB 6bits+FRC) images are displayed on the panel.Video input signals are analog RGB (0.7Vp-p). When the systemis powered-on , previously stored screen parameters for a pre-defined mode will be recalled if the operating mode is one of stored in memory(19 factory , 9 users timing).This monitor operates normal by non-interlaced mode. DDC (Display Data Channel) function is DDC2Bi compliance Power saving function complies with the DPMS (Display Power Management Signaling) standard.

1.2 GENERAL REQUIREMENTS

1.2.1 Test Condition

Brightness level & contrast level max. Full white pattern test mode following spec. Warm up more than 1 hr, ambient light < 10 Lux , Luminance meter CA110 or BM7 or same equipment .

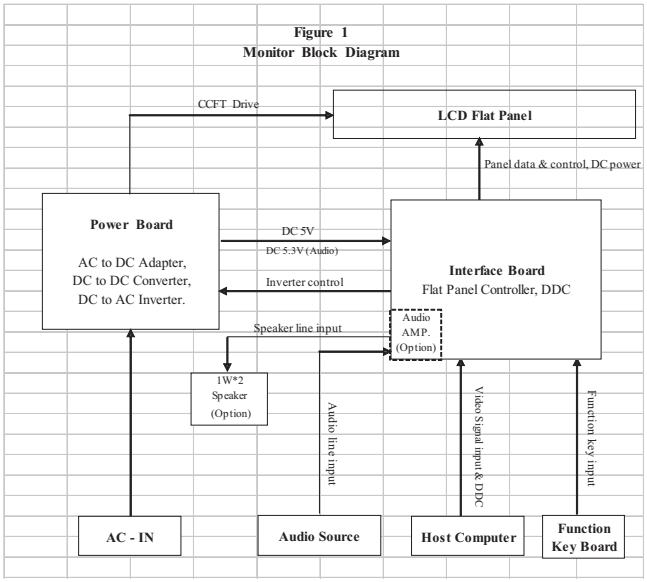
1.2.2 Test Equipment

The reference signal source is a calibrated Chroma 2135 video generator or higher.The use of other signal generators during qualification and production is acceptable provided the product complies with this specification.

1.3 ELECTRICAL

This section describes the electricalrequirement of the monitor.The block diagram in Figure1 illustrates the various electrical sub-system.

Figure 1
Monitor Block Diagram



The LCD monitor consists of an interface board , a power board , a function key board and two speaker (1W)(with audio)
The interface board will house the flat panel control logic , brightness control logic, audio function control (option), key function control, DDC and DC to DC conversion to supply the appropriate power to the whole board and LCD flat panel , and transmitting LVDS signals into LCD flat panel module to drive the LCD display circuit .
The power board will support main power DC5V to interface board, and the power DC5.3V to audio function power of interface board,and drive the two CCFLs (Cold Cathode Fluorescent Tube).The interface board provides the power ON / OFF control over the whole monitor and control for DPMS LED indicator to function key board.

MONITOR SPECIFICATIONS

ITEM		SPEC
Signal Input (Analog)	Frequency	Analog : H : 30kHz~81kHz V : 56Hz~76Hz
	Pixel clock	165MHz (Max)
	Video Input	Analog 0.7Vp-p
	Display Pixels	640 x 480 (VGA) ~ 1680 x 1050 (WSXGA)
	Sync Signal	Separate SYNC for TTL (N or P)
Signal Input (Digital)	Frequency	Digital : H : 30kHz~81kHz V : 56Hz~76Hz
	Pixel clock	165MHz (Max)
	Video Input	Analog 0.7Vp-p Input Impedance 75Ω
	Display Pixels	640 x 480 (VGA) ~ 1680 x 1050 (WSXGA)
Connector	AC Input	AC100V ~ AC240V ± 10% 50/60Hz , 3 pin AC power cord
	Input connector	D-SUB 15 pin & DVI-D
	Audio Jack (OPTIONAL)	Audio input 3.6F
Power Consumption	AC in 100V~240V	Active 48W (with Audio), active 38W, power saving < 2W
User's Control	Front	Empowering,Auto Adjust,Adjust(-),Adjust (+),Menu,Power
	OSD	Contrast , Brightness , Position ,Clock ,Phase ,Analog/Digital,RESET, Color , Language select , Audio (option), etc.
Pre-Defined Timing	Factory	19
	User	9
Plug and Play		VESA DDC2Bi
Power Saving		VESA DPMS
Input Signal Counter Tolerance		≦ H ± 1kHz, ≦ V ± 1 Hz

1.3.1 Interface Connectors

1.3.1.1 Power Connector and Cables

The AC input shall have an IEC/CEE-22 type male power receptacle for connection to mains power. The power cord shall be with length of 1.8+/-0.005 meters.

1.3.1.2 Video Signal Connectors and Cable

The signal cable shall be 1.8 +/-0.005 meters long. At the end of the cable shall be a molded-over, shielded,triple row, 15 position, D-subminiature connector. The CPU connection shall have captive screw locks, which will be adequate for hand tightening. The monitor connection may use small screws.

Connector Pin Assignment

D S U B

Pin	Signal	Pin	Signal	Pin	Signal
1	Red-Video	6	Red-GND	11	NC
2	Green-Video	7	Green-GND	12	DDC-SDA
3	Blue-Video	8	Blue-GND	13	H-SYNC
4	NC	9	+5V	14	V-SYNC
5	DDC-GND	10	Sync-GND	15	DDC-SCL

Connector Pin Description

D-SUB Pin Description

Pin	Name	Description
1	Red-Video	Red video signal input.
2	Green-Video	Green video signal input.
3	Blue-Video	Blue video signal input.
4	GND	Ground
5	DDC-GND	DDC ground for the VESA DDC2Bi function.
6	Red-GND	Analog signal ground for the Red video.
7	Green-GND	Analog signal ground for the Green video.
8	Blue-GND	Analog signal ground for the Blue video.
9	+5V	+5V input from host system for the VESA DDC2Bi function.
10	Sync-GND	Signal ground
11	GND	Ground
12	DDC_SDA	SDA signal input for the VESA DDCB2i function.
13	H-SYNC	Horizontal signal input from the host system.
14	V-SYNC	Vertical signal input from the host system.
15	DDC-SCL	SCL signal input for the VESA DDC2Bi function.

DVI-I / DVI-D (If using DVI-D cable, C1, C2, C3, C4, C5 is NC)

Pin	Signal	Pin	Signal	Pin	Signal
1	RX2-	**11**	GND	**21**	NC
2	RX2+	**12**	NC	**22**	GND
3	GND	**13**	NC	**23**	RXC+
4	NC	**14**	5V	**24**	RXC-
5	NC	**15**	GND	**C1**	Analog Red (NC)
6	SCL	**16**	HP	**C2**	Analog Green (NC)
7	SCA	**17**	RX0-	**C3**	Analog Blue (NC)
8	Analog V-Sync (NC)	**18**	RX0+	**C4**	Analog H-Sync (NC)
9	RX1-	**19**	GND	**C5**	GND
10	RX1+	**20**	NC		

DVI-I / DVI-D Connector Pin Description

Pin	Name	Description	Pin	Name	Description
1	RX2-	TMDS link #0 channel #2 differential pair	16	HP	Hot plugging
2	RX2+	TMDS link #0 channel #2 differential pair	17	RX0-	TMDS link #0 channel #0 differential pair
3	GND	GND for no link share	18	RX0+	TMDS link #0 channel #0 differential pair
4	NC	NC	19	GND	GND for no link share
5	NC	NC	20	NC	NC
6	SCL	Clock line for DDC interface	21	NC	NC
7	SDA	Data line for DDC interface	22	GND	Clock shield
8	Analog V-Sync	V-sync for analog interface	23	RXC+	TMDS clock differential pair
9	RX1-	TMDS link #0 channel #1 differential pair	24	RXC-	TMDS clock differential pair
10	RX1+	TMDS link #0 channel #1 differential pair	C1	Analog Red	Analog Red signal
11	GND	GND for no link share	C2	Analog Green	Analog Green signal
12	NC	NC	C3	Analog Blue	Analog Blue signal
13	NC	NC	C4	Analog H-Sync	H-sync for analog interface
14	5V	+5V input from host system for DDC2B function.	C5	Analog GND	Analog GND
15	GND	Ground(Using as Detect Cable)			

1.3.1.3 Audio Jack (option)

This jack shall connect the audio input from host computer.

1.3.2 Video Input Signals

Video Input Signal

No.	Symbol	Item	Min	Normal	Max	Unit	Remark
1	Fh	Scanning Horizontal Frequency	30		81	kHz	Minimum range
2	Fv	Scanning Vertical Frequency	55		76	Hz	Minimum range
3	Vih	Hi Level Input	2.0		5.0	V	Note 1)
4	Vil	Low Level Input	0		0.8	V	Note 1)
5	Video	RGB Analog Video Level	0.0	0.7	1.0	V	75Ω to Ground

Note 1) Schmitt-Triggers Input , Supported 3.3V device H(&V) sync output from PC.

1.3.2.1 Video Signal Amplitudes

The three video inputs consist of Red ,Green , and Blue signals, each with its own coaxial cable terminated at the monitor. These video signals are analog levels, where 0 V corresponds to black , and 700 mV is the maximum signal amplitude for the respective color, when each signal is terminated by a nominal 75.0 ohms .For a given monitor luminance levels are measured using this defined video amplitud driving a monitor meeting the termination requirements .The signal amplitude is not to be readjusted to compensate for variations in termination impendance.

1.3.2.2 Video Signal Termination Impedance

This analog video signal termination shall be 75Ω+/-1% which shall be resistive with a negligible reactive component .

1.3.2.3 Synchronization (Sync) Signals

The Horizontal Sync (HS) TTL signal is used to initiate the display of a horizontal line. HS may be either active high or active low, depending upon the timing .The Vertical Sync (VS) TTL signal is used to initiate the display of a new frame .VS may be either active high or active low, depending on the timing

1.3.2.4 Sync Signal Levels

The monitor must accept sync signals from both 3.3 and 5 volt TTL logic families.The inputs shall sense a logic 0 when the input is 0.8 volt or less and shall sense a logic 1 when the input is 2.0 volts or greater. In addition to these level requirements, there shall also be a minimum of 0.3 volt hysteresis provided for noise immunity (typically by using a Schmitt Trigger input).That is , the input level at which the monitor actually detects a logic 0 shall be at least 0.3 volt lower than the level at which it actually detects a logic 1.If the monitor sync processing circuits are designed around the 3.3 volt logic family ,then the sync inputs must be 5 volt tolerant .

1.3.2.5 Sync Signal Loading

TTL input loading shall be equivalent to one TTL input load. When logic 0 is asserted by a sync input , the maximum current source from any single monitor sync input to the driver is 1.6 mA .When logic 1 is asserted , the maximum current source from the driver to any single monitor sync input is 400 uA .

1.3.2.6 Abnormal Signal Immunity

The monitor shall not be damaged by improper sync timing , pulse duration , or absence of sync , or abnormal input signal amplitude (video and/ or sync too large or too small) , or any other anomalous behavior of a graphics card video generator when changing modes , or when any combination of input signals is removed or replaced . Additionally , under these conditions , the monitor shall not cause damage to the driving source

1.3.3 User Controls and Indicatiors

1.3.3.1Power On / Off Switch

The monitor shall have a power control switch visible and accessible on the front of the monitor . The switch shall be marked with icons per IEC 417 , # 5007 and # 5009.The switch shall interrupt the DC supply to the monitor

1.3.3.2 Power Indicator LED

The monitor shall make use of an LED type indicator located on the front of the monitor . The LED color shall indicate the power states as given in Table 1.

Table 1

Function	LED Color
Full Power	Blue color
Sleep	Orange color

1.3.3.3 On-Screen Display

The Lite-ON On Screen Display system shall be used , controlled by a Menu button. If the buttons remain untouched for OSD turn off time while displaying a menu , the firmware shall save the current adjustments and exit. Also, if the video controller changes video mode while the OSD is active, the current settings shall be saved immediately, the OSD turn off, and new video mode is displayed.

Description

Key	When no OSD display	OSD Displayed
MENU	Menu Display	1. To display the OSD menu on the screen. 2. To select the OSD sub-Menu
>	Speaker Volume/Minus (with Audio)	1. Forward selection of the OSD menu. 2. Increase the value after sub-menu selected.
<	Speaker Volume/Plus (with Audio)	1. Back-forward selection of the OSD menu. 2. Decrease the value after sub-menu selected.
Auto	Auto Adjust Function	Menu or sub.menu EXIT/Auto Adjust function.
E	Empowering	Menu or sub.menu EXIT/Scenario mode

1.3.3.4 OSD adjustment

ITEM	CONTENT
AUDIO VOLUME	To increase or decrease the sound level
BRIGHTNESS	Back light Luminance of the LCD panel is adjusted.
CONTRAST	A gain of R , G and B signal is adjusted.
AUTO CONTRAST	A gain of R , G and B signal auto adjust.
CLOCK	The ratio of dividing frequency of the dot clock is adjusted.
PHASE	The phase of the dot clock is adjusted.
H-POSITION	The indication screen is horizontally moved right and left (1 Pixels pitch).
V-POSITION	The indication screen is vertically moved up and down (1 Pixels pitch).
AUTO ADJUST	Clock system auto adjustment, about under 8 sec.
COLOR BALANCE	Select three kinds of modes. (USER /6500 / 9300).
OSD POSITION	The OSD indication position can be adjusted.
OSD LANGUAGE	Select the language used for the OSD menu among English , French , Italian , Deutsch and Spanish.
RECALL DEFAULTS	All data copy from factory shipment data.
OSD DURATION	Adjust OSD menu off time range from10~120 second.
POWER-SAVE	Back light of the LCD panel is cut when the signal is not input (AC line power consumption 2W or less).
INFORMATION	The frequency of the horizontal / vertical synchronizing signal under the input is indicated.

※ NOTE : OSD MENU SEE APPENDIX A

1.3.4 Monitor Modes and Timing Capability

1.3.4.1 Format and Timing

The monitor shall synchronize with any vertical frequency from 55 to 76 Hz , and with any horizontal frequency from 30 to 81KHz. If the input frequency is out of the above – specified range, the monitor shall display a warning screen indicating that the input frequency is out of range. Under no circumstances shall any combination of input signals cause any damage to the monitor .

1.3.4.2 Factory Assigned Display Modes

There are 19 factory pre-set frequency video modes. These modes have a factory pre-set for all characteristics affecting front-of-screen performance. When the system is powered-on,previously stored screen parameters for a pre-defined mode will be recalled if the operating mode is one of those stored in memory. If the operating mode is not one of those stored in memory, the monitor CPU will select the PRESET timing for a mode that is the next lowest in horizontal scanning frequency to the mode being currently used. The screen parameters may be adjusted by the use of the front bezel controls and then may be saved as a user defined mode. The monitor shall include all the preset video timings shown in the following page.(Please see Note.(3))

1.3.4.3 Mode Recognition Pull-in

The monitor shall recognize preset modes within a range of +/-1KHz whichever is less for horizontal ; and within +/-1Hz for vertical.

1.3.4.4 User Display Modes

In addition to the factory pre-set video modes, provisions shall be made to store up to 9 user modes. If the current mode is a user mode, the monitor shall select its previously stored settings. If the user alters a setting, the new setting will be stored in the same user mode. The user modes are not affected by the pre-set command. If the input signal requires a new user mode, storage of the new format is automatically performed during user adjustment of the display (if required, please see Note.(4))

Preset Timing Chart

Item	No	Resolution	H-Sync (KHz)	Band Width (MHz)	Polarity H	Polarity V
1	102	720 x 400 (70Hz)	31.469	28.322	-	+
2	103	640 x 480 (59.94Hz)	31.469	25.175	-	-
3	182	640 x 480 (66.66Hz)	35	30.24	-	-
4	173	640 x 480 (72Hz)	37.861	31.5	-	-
5	109	640 x 480 (75Hz)	37.5	31.5	-	-
6		648 x 500 (57.7Hz)	31.234	25.175	+	+
7	104	800 x 600 (56.25Hz)	35.156	36	+	+
8	116	800 x 600 (60Hz)	37.879	40	+	+
9	117	800 x 600 (72Hz)	48.077	50	+	+
10	110	800 x 600 (75Hz)	46.875	49.5	+	+
11	108	832 x 624 (74.55Hz)	49.722	57.28	-	-
12	118	1024 x 768 (60Hz)	48.363	65	-	-
13	157	1024 x 768 (70Hz)	56.476	75	-	-
14	141	1024 x 768 (75Hz)	60.023	78.75	+	+
15	126	1152 x 864 (75Hz)	67.5	108	+	+
16	161	1280 x 960 (60Hz)	60	108	+	+
17	179	1280 x 1024 (60Hz)	63.981	108	+	+
18	131	1280 x 1024 (75Hz)	79.976	135	+	+
19		1680 x1050(60Hz)	65.3	146.25	-	+

NOTE : (1) 76 ≦ FV ≦ 86 : monitor can display but doesn't guarantee.
(2) fV < 55, or fV > 86 : warning invalid mode.
(3) Factory model :
After we first burn the code into the flash, every preset-model we run first must do auto-adjusting.
Then it'll not do auto-adjust again when we changed preset-mode back including AC on/off DC on/off.
The only way that preset-mode do auto-adjust again is press " Internal Factory Reset".
(4) User mode :
The code should memorize 9 timing mode exclusive of preset-modes as use mode and do auto-adjusting.
When user set a new mode that is not among previously. It'll do auto-adjusting then be solved to user modes.
The new mode will overwrite the first memorized user modes.
The user modes be cleared is same as Factory mode. Just do " Internal Factory Reset".
(5) Internal Factory Reset and OSD Factory Reset behavior.

1.3.5 Controller Requirements

1.3.5.1 General Requirements

The monitor shall include a controller capable of converting the analog RGB signal from a standard SXGA resolution video controller in the CPU to a signal which can be displayed on the panel. The controller will include a PLL, A/D converters, LVDS transmitter and other circuitry necessary to perform its function. The PLL shall be stable enough to ensure that a static image from the CPU is placed in the same physical location on the flat panel in each frame.

1.3.5.2 Video Stretching

The monitor shall contain provisions to “stretch” the video signal, so that an input signal from the computer in any resolution smaller than 1680 x 1050 is automatically expanded to fill the entire screen.

1.3.5.3 Panel Timing and Interface

The controller supplied with the monitor shall control all panel timing. This controller shall adequately insulate the monitor from the computer, so that no possible combination of input signals from the computer shall cause damage to the flat panel or any other component of the monitor. The LCD panel interface shall support the TFT standard.

1.3.6 DC - AC Inverter Requirements

The DC-AC inverter is on the power board. The frequencies used by the DC-AC inverter used to power the backlight shall be chosen so as to prevent any noticeable effects on the flat panel (such as a rolling effect).

1.3.7 Power Supply Requirements

The AC to DC converter power supply for the monitor shall be an external AC to DC converter ”brick” This brick shall have an IEC receptacle for main power input and a pin - in -socket for DC power out. The brick shall provide sufficient power for both the monitor and the backlight assembly, and shall meet requirements specified in Table 2.

Table 2
AC to DC Converter Requirements

Input Voltage Range	The operating range shall be from 90 to 132 and 195 to 265 AVC sinusoidal for all models specified.
Input Frequency Range	Input power frequency range sha;; be from 47.5 to 63 Hz over the specified input voltage range.
Power Consumption	Power consumption for the monitor shall be less than 46W over the specified voltage and frequency ranges. In suspend or sleep mode the power consumption will be less than 2W.
Line Fuse	The AC input shall be fused and become electrically open as a result on an unsafe current level. The fuse many not be user replaceable.
Initial Cold Start	The power supply shall start and function properly when under full load, with worst case conditions of input voltage, input frequenct, operating temperature, and cold backlight lamps.
Inrush Current	The inrush current must be limited to 30A when operated at 120VAC, and 50A when operated at 220VAC. Inrush current is measured at an ambient temperature of 25°C, with the unit temperature stabilized in the power-off.
Hot Start Cycle	The power supply shall be damaged when switched ON for one second and OFF for one second for seven consecutive after operating for one hour at full load, 25°C, and nominal input line voltage.
Under Voltage	The power supply shall contain protection circuitry such that the application of an input voltage below the minimum specified in this table shall not cause damage to the power supply unit nor cause failure of the input.
Line Transient	The power supply shall operate within IEC 801-4 (± 1KV) and IEC 801-5 (± 2KV) for the domestic U.S. version. The UPS power supply shall operate and comply with CE mark.

1.3.8 Display Communications Channel

The monitor assembly shall provide a display communications channel that conforms to VESA DDC2Bi hardware requirements. This configuration shall contain the 128-byte EDID file as specified by VESA EDID standard.The monitor should not write to the EDID file for the first two minutes of operation following power-up UNLESS some action taken by the user or the host CPU forces the write (for instance, requesting the serial number via the OSD). Furthermore, it is recommended that CMOS switches be incorporated to isolate the DDC IC from outside connections while the EDID Fault Management is being updated. This is to prevent corruption of the data by attempts to read the data while it is being changed.

1.3.9 Firmware Update Function (same ISP function)

The update firmware need through from the D-Sub connector, use DDC I2C bus to do update firmware.

1.4 PANEL ELECTRICAL

1.4.1 General Requirements

The panel used as the display device shall be an WSXGA resolution,20/22W, TFT-LCD.This panel shall be approved for use in this monitor.

1.4.2 Panel Timings

The controller included with the monitor shall translate all video timings from the CPU that meet the timing requirements listed in Panel specification into timings appropriate for the panel. Under no circumstances may the controller supply the panel with timings that may result in damage. The controller shall insulate the panel from the CPU , so that the panel shall always be driven per it's own specification regardless of the timings being sent from the CPU.

1.4.3 Polarizer Hardness

The outer face of the front polarizer panel shall be covered with a coating with a # 3 hardness value .

1.4.4 Backlight Requirements

1.4.4.1 General Requirements

The backlight assembly shall be designed to support field replacement at the customer site or authorized service center. The lamps shall have a continuous operating life of at least 40,000 hours at 25. The operating life is defined as having ended when the illumination of light has reached 50% of the initial value. The lamps shall extend a sufficient amount from the edge of the light guide that sputtering over the life of the lamps shall not cause degradation of the luminance uniformity (such as non-illuminated bands along the edges of the display).

1.4.4.2 Lamps Startup Time

The backlight lamps shall start about 2 sec of the time the monitor power switch is pressed or the monitor is restarted from a power - down mode .The starting time shall stay about 2 sec. for the minimum expected life of the lamps.

Test conditions are as follows :

Ambient Light ----------	< 1.0 lux
Temperature----------	10℃
Inactive Time ----------	> 24 hours

1.4.5 Defects

1.4.5.1 Visual Inspection

The LCD panel shall be inspected with all pixels set to white,black , red , green , and blue. The color variation, brightness variation , and overall appearance must not be perceived as poor quality by Lite-On . Areas and / or parameters considered questionable shall be subjected to detailed measurements .

1.4.5.2 Display Degradation

Over the life of the product , variation of the parameters specified in Panel specification shall be maintained within reasonable limits.The panel must not exhibit any significant defects while in operation (excluding the CCFL operation).This does not in any way change the warranty given by the panel manufacturer .

1.4.5.3 Light Leakage

Except for the active display area , there shall be no light emission visible from any angle from any other part of the display . For this test , the ambient illumination must follow panel's specification.

1.4.5.4 Allowable Defects

No cosmetic defects are allowed except those specified below.The conditions of visual inspections are as follows :

For P20/22 W Series.

- ■Viewing distance is to be approximately 35-50cm
- ■Ambient illumination is to be 300 to 700 lux.
- ■Viewing angle shall be at 90 degree.
- ■Defects not apparent within one minute shall be ignored.

1.4.5.5 Defect Terminology

Table 3 gives the descriptive terms used in classifying defects.

Dark / Spots / Lines	Spots or lines that appear dark in the display patterns and are usually the result of contamination. Defects do not vary in size or intensity (contrast) when contrast voltage is varied. Contrast variation can be achieved through the use of varying gray shade patterns.
Bright Spots / Lines	Spots or lines that appear light in the display patterns. Defects do not vary in size or intensity (contrast) when contrast voltage is varied. Contrast variation can be achieved through the use of varying gray shade patterns.
Polarizer Scratch	When the unit lights, lines appear light (white) with display patterns dark and do not vary in size. Physical damage to the polarizer that does not damage the glass
Polarizer Dent	When the unit lights, spots appear light (white) with display patterns dark and do not vary in size. Physical damage to the polarizer that does not damage the glass.
Rubbing Line	Horizontal or diagonal lines that appear gray with the display patterns dark and may have resulted from an “out of control” rubbing process on the polyimide or “waves” on the BEFs or prism sheets.
Newton Ring	The “rainbow” effect caused by non-uniform cell thickness.
Mottling	When the unit lights, variation / non – uniformity (splotchiness) appears light (white) with the display and might vary in size.
Dim Line	When the unit lights, line(s) in the monitor (vertical) or major (horizontal) axis appear dim, but not completely on or off.
Cross Lines Off	When the unit lights, lines in both the minor and major axis do not appear.
Bright / Dark Dot	A sub – pixel (R,G,B dot) stuck off / on (electrical).

1.4.5.6 Smudges, Streaks and Smears

When viewing the panel oriented so as to maximize reflected light , there shall be no visible smudging , streaking, smearing or other nonuniformity from contaminants ,fingerprints,or defects in any of the visible surfaces. This is independent of whether the unit is operating or off .

1.4.5.7 Other Defects

Undefined defects that are considered to be rejectable by Lite–On will be reviewed by Lite-On as they become apparent. These panels will be referred to the Lite - On Corporate / Manufacturer Purchasing Agreement for disposition.

1.4.5.8 LCD Inspection

Put LCD panel on inspection table and illuminate the panel with a daylight fluorescent lamp located above the panel surface such that the illuminance at the LCD panel is between 1000 lux and 1500 lux .Defect limits are given in Table 4 .

Average Diameter smaller of (L+W)/2 or L/20+2W	Acceptable Number	Minimum Separation
< 0.1mm	Non countable	N / A
0.1 mm ~ 0.3 mm	10	15 mm
0.31 mm ~ 0.5 mm	10	15 mm
0.51 mm ~ 1.25 mm	5	15 mm
1.26 mm ~ 2.5 mm	3	25.4 mm
2.51 mm ~ 3.75 mm	3	25.4 mm
Greater than 3.75 mm	NONE	Not applicable

Note : Allowable distance between spots of two sizes is the minimum separation number for the smaller spot. Therefore, if there are two spots, 1.30mm and 0.4mm in diameter, they must be at least 15mm apart.

1.5 Optical Characteristics

Depends on the LCD supplier's spec. Details refer to QA Inspection Spec.

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2.1 MAIN OSD MENU

Outline:

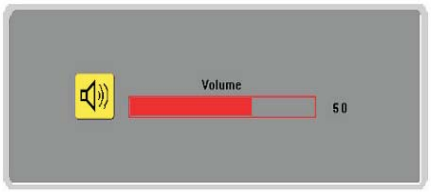
The description for control function:

Main Menu Icon	Sub Menu Icon	Sub Menu Item	Description	Adjustment Range	Reset Value
		Contrast	Adjusts the contrast between the foreground and background of the screen image.	0-100	50 (Standard Mode)
		Brightness	Adjusts the background brightness of the screen image.	0-100	85 (Standard Mode)
		Focus	Adjusts picture Focus. (available in Analog mode only)	0-100	Do Auto config
		Clock	Adjusts picture Clock. (available in Analog mode only)	0-100	Do Auto config
		H. Position	Adjust the horizontal position. (available in Analog mode only)	0-100	Do Auto config
		V. Position	Adjust the vertical position. (available in Analog mode only)	0-100	Do Auto config

Main Menu Icon	Sub Menu Icon	Sub Menu Item	Description	Adjustment Range	Reset Value
	N/A	Warm	Set the color temperature to warm white.	N/A	The color temperature will be set to cool.
	N/A	Cool	Set the color temperature to cool white.	N/A	
		User/Red	Adjusts Red/User/Green Green/Blue intensity.	0-100	100
		User/Green		0-100	100
		User/Blue		0-100	100
	N/A	English	Multi-language selection.	N/A	The language will be set to English
	N/A	繁體中文			
	N/A	Deutsch			
	N/A	Francais			
	N/A	Espanol			
	N/A	Italiano			
	N/A	簡體中文			
	N/A	日本語			
		H. Position	Adjust the horizontal position of the OSD.	0-100	50
		V. Position	Adjust the vertical position of the OSD.	0-100	50
		OSD Timeout	Adjust the OSD timeout.	10-120	10
	N/A	Auto Config	Auto Adjust the H/V Position, Focus and Clock of picture. (Only Analog Input Model)	N/A	N/A
	N/A	Analog	Select input signal from analog (D-Sub) (Only Dual Input Model)	N/A	N/A
	N/A	Digital	Select input signal from digital (DVI) (Only Dual Input Model)	N/A	N/A
	N/A	DDC/CI switch	Select the DDC/CI ON or OFF	N/A	The DDC/CI switch, default is "ON" in monitor.
	N/A	Information	Show the resolution, H/V frequency ,SN and input port of current input timing.	N/A	N/A
	N/A	Reset	Clear each old status of Auto-configuration and set the color temperature to Warm.	N/A	N/A
	N/A	Exit	Save user adjustment and OSD disappear.	N/A	N/A

Hot-Key Menu

Outline: (With Audio Function)



The description for Hot-Key function:

Item	Operation	Icon	Description	Adjustment Range	Reset Value
Volume	When the OSD is Closed,Press left or right button will be Volume Hot-Key Function		Volume of Audio adjustment The Audio will be Mute when Volume=0	0-100	50

OSD Message

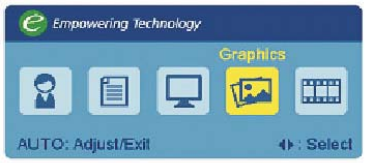
Outline:

The description for OSD Message:

Item	Description
Auto config please wait	When user press Hot-Key "Auto" ,will show this message, and the monitor do the auto config function.
Input Not Suported	When the H sync Frequency, V sync Frequency or Resolution is out of the monitor support range, will show this message. This message will be flying.
Cable Not Connected	When the Video cable is not connected, will show this message. his message will be flying.
No Signal	When the Video cable is connected, but it is no active signal input, will show this message, then enter power saving.

scenario mode

- User mode
- Text mode
- Standard mode
- Graphics mode
- Movie mode



Final Spec

mode	contrast (OSD)	brightness (OSD)
standard	50 (slope 1)	77 (85%)
text	50 (slope 1)	44 (61%)
graphic	60 (slope 1.04)	97 (98%)
movie	56 (slope 1.025)	77 (85%)

Operation Method

Step1:
Press " key " to initial scenario mode

Step2:
press " < or > " to select the mode you want
(different mode will show different color instantly
(select operation only left and right, not cyclic)

Step3:
If user have NO action after Step2
OSD will disappear after 10 sec and do "auto scan"
(now the mode will keep original one, no change)

If user press " key " after Step2
it means user confirm the chosen mode and monitor will do "auto scan" as well
(then the mode is the chosen one)

DCC/CI switch in OSD

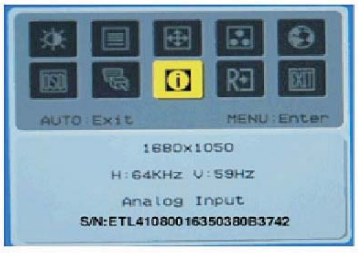
For Dual Input Model

For Analog only Model

Remark:

1. The DDC/CI switch, default is "**ON**" in monitor.
2. For Analog only Model, use icon to instead of icon in OSD

Display Serial Number in OSD



Remark:

The SN data source can be retrieved from EDID

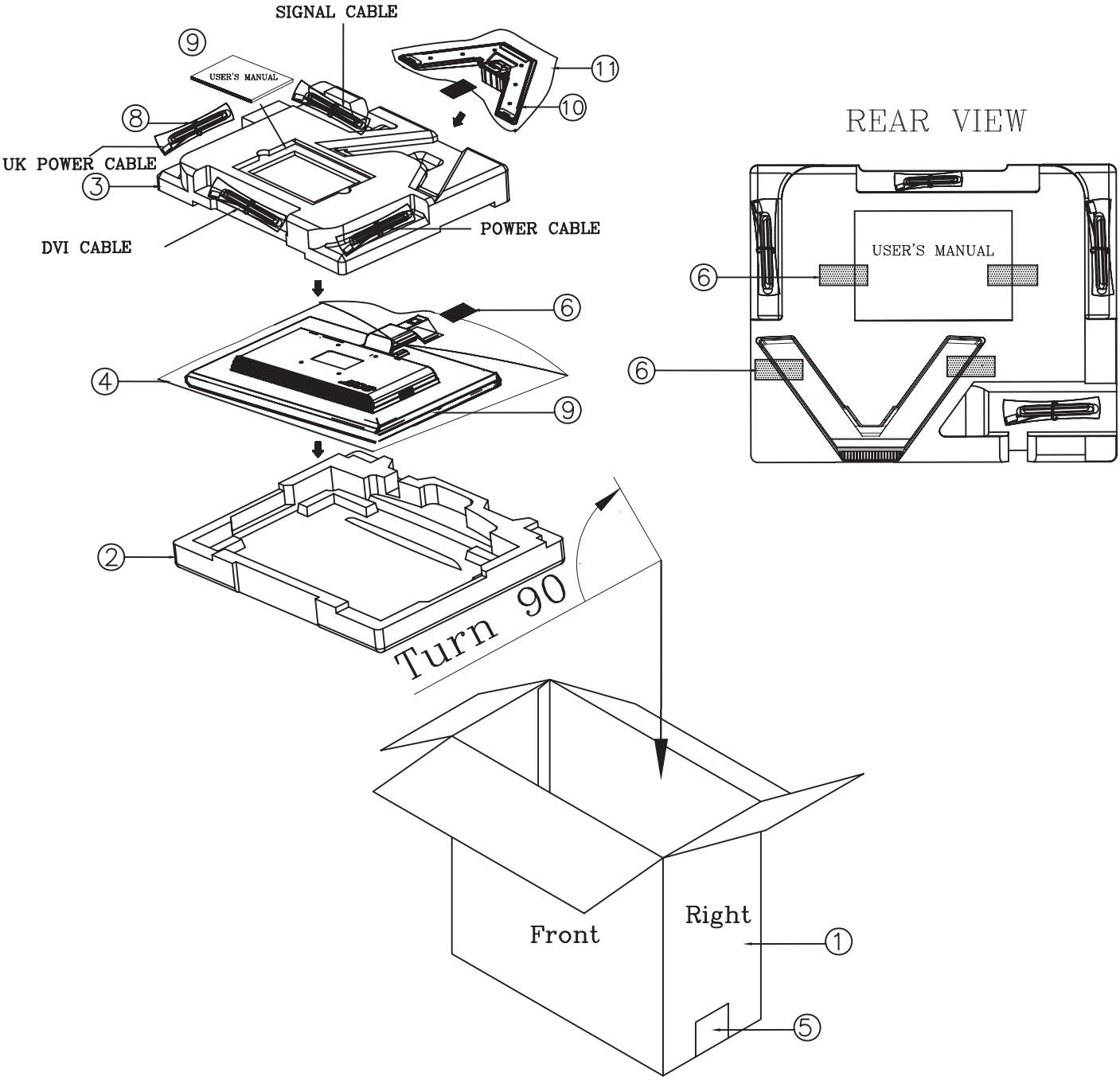
AppendixA ACER R17 Series

*Multiple Language

8-language contrastive table

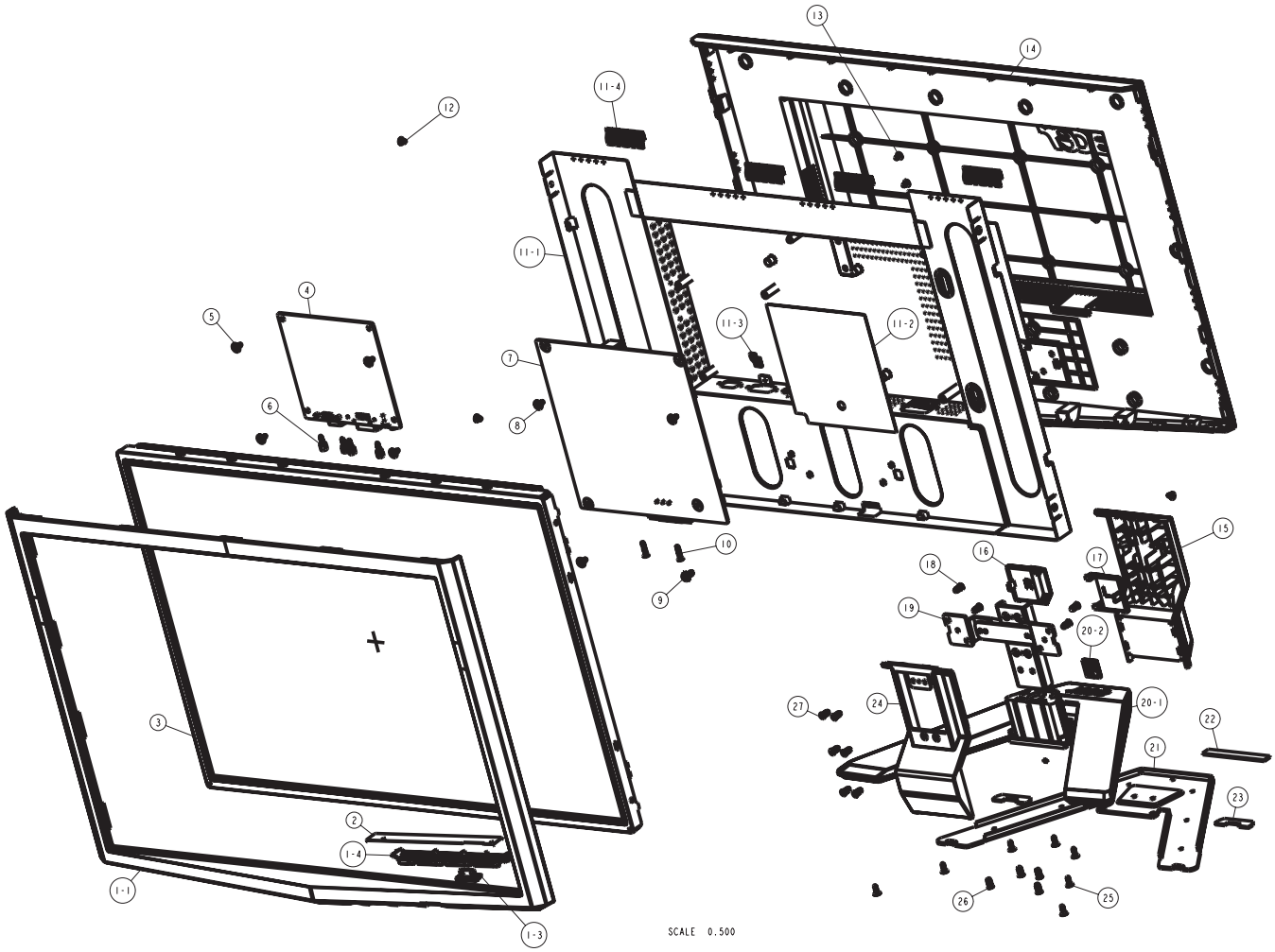
English	Deutsch	Español	簡体中文	繁體中文	Français	Italiano	日本語
Contrast	Kontrast	Contraste	对比度	對比	Contraste	Contrasto	コントラスト
Brightness	Helligkeit	Brillo	亮度	亮度	Luminosité	Luminosità	輝度
Focus	Fokus	Nitidez	相位	相位	Netteté	Nitidezza	フェイズ
Clock	Takt	Reloj	时序	時脈	Fréquence	Orologio	クロック
Warm	Warm	Cálido	暖色温	暖色溫	Chaud	Caldo	暖色
Cool	Kalt	Frío	冷色温	冷色溫	Clair	Freddo	寒色
User	Anwender	Usuario	使用者设定	使用者設定	Utilisateur	Utente	カスタムカラー
Red	Rot	Rojo	紅色	紅色	Rouge	Rossa	赤
Green	Grün	Verde	綠色	綠色	Vert	Verde	緑
Blue	Blau	Azul	藍色	藍色	Bleu	Blu	青
English	English	English	English	English	English	English	English
H. Position	H. Position	H. Posicion	水平位置	水平位置	H. Position	O. Posizione	水平位置
V. Position	V. Position	V. Posicion	垂直位置	垂直位置	V. Position	V. Posizione	垂直位置
OSD Timeout	OSD-Dauer	T. de espera OSD	OSD 显示时间设定	OSD 顯示時間設定	Délai de l'OSD	Intervallo OSD	OSD 表示時間設定
Analog	Analog	AnalÓgico	模拟	類比	Analogique	Analogico	入力 アナログ
Digital	Digital	Digital	数位	數位	Numér	Digitale	入力 デジタル
Reset	Rücksetzen	Reiniciar	恢复出厂模式	恢復出廠模式	Restaurer	Resetare	リセット
Exit	Beenden	Salida	退出菜单	結束調整	Quitter	Uscita	終了
AUTO : Exit	AUTO : Beenden	AUTO : Salida	AUTO : 退出菜单	AUTO : 結束調整	AUTO: Quitter	AUTO : Uscita	AUTO : 終了
AUTO : Return	AUTO : Zurück	AUTO : Volver	AUTO : 返回	AUTO : 返回	AUTO: Retour	AUTO : Ritorno	AUTO : 戻る
Volume	Lautstärke	Volumen	音量	音量	Volume	Volume	音量
No Signal	Kein Signal	Sin señal	无 讯 号	無 訊 號	Pas de signal	Assenza segnale	入力信号を確認してください
Auto Config	Autom. Abgl.	Autoajuste	自 动 调 整	自 動 調 整	Autoréglage	Autoregolazione	自 動 調 整
MENU : Enter	MENU : Eingabe	MENU : Introducir	MENU : 进 入	MENU : 進入	MENU: Entrez	MENU : Invio	MENU : 選択
MENU : Return	MENU : Zurück	MENU : Salida	MENU : 返回	MENU : 返回	MENU: Retour	MENU : Ritorno	MENU :戻る
Input Not	Frequenzen nicht	Frecuencias no	输 入	不 支 援	Fréquences non	Frequenza non	このモードは表示で
Supported	unterstützt	soportadas	不 支 援	輸 入 訊 號	supportées	supportata	きません
Connected	angesch lossen	Conectado	连 接	連 接	connecte	connesso	りません
Cable Not	Leitung nicht	Cable no	无 讯 号 线	無 訊 號 線	Cable non	Cavo non	ケーブルが接続されて
Please Wait	Bitte Warten	Espere por favor	请 稍 待	請 稍 待	Veuillez patienter	Attendere prego	お待ちください
Digital Input	Digital Eingang	Digital Entrada	数位输入	數位輸入	Numérique Entrée	Digitale Input	デジタル入力
Analog Input	Analog Eingang	AnalÓgico Entrada	模拟输入	類比輸入	Analogique Entrée	Analogico Input	アナログ入力
User	Gebruiker	Usuario	用户	使用者	Utilisateur	Utente	ユーザー
Text	Tekst	Texto	文本	文字	Texte	Testo	テキスト
Standard	Standaard	Estándar	标准	標準	Standard	Standard	標準
Graphics	Grafische	Gráficos	图形	圖形	Images	Grafica	グラフィックス
Movie	Film	Película	电影	電影	Film	Film	ムービー
AUTO: Adjust/Exit	AUTO: Aanpassen/verlaten	AUTO: Ajuste/salir	AUTO: 调节/退出	AUTO: 調整/結束	AUTO: Ajuster/Quitter	AUTO: Regolar/Esci	AUTO: 調整/終了
: Select	: Selecteren	: Seleccionar	: 选取	: 選擇	: Sélectionner	: Seleziona	: 選択

3.1 Packing Exploded Diagram



ITEM	QT'Y	PART NO	DESCRIPTON	DRAW NO	REMARK
①	1	774920xxxxP0A	CARTON	834000XXXX	
②	1	7749106700P0A	EPS-Front	8340005689	
③	1		EPS-Rear		
④	1	7749003010P0A	EPE. BAG	8340005421	LCD MONITOR
⑤	0.002	7749600850P0A	TAPE	8440006267	914M
⑥	0.035	7749600200P0A	TAPE	8440004216	25mm(W)
⑦	1	7740100200P	WIRING TIES	8440000046	250x2.5mm
⑧	1		USER'S MANUAL		
⑨	1		LCD MONITOR		
⑩	1		BASE		
⑪	1.012	7749003200P0A	P.E. BAG	8440006561	BASE

3.2 Product Exploded Diagram



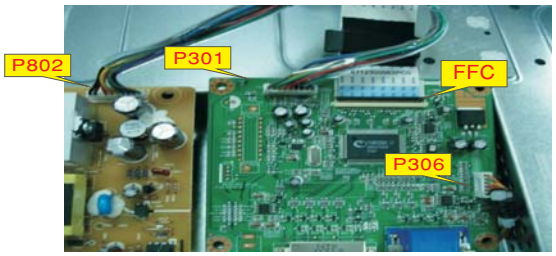
ITEM	SUB-ITEM	PART NO.	DESCRIPTION	Q'TY
1		77375156 00P0A	FC ASSY #7100_ABS_94HB _ACER_R22ANSW-MI_X	1
	1-1	77422384 00P0A	FC_#7100_ABS_94HB _ACER_R22BNUM-MI_X223W	1
				1
	1-3	77423028 80P0A	LENS_KEY_TRANSPARENT(X50)_ ABS_UL94HB_ACE	1
	1-4	77428079 60P0A	PUSH_BUTTON_#7080/#7090_ABS- UL94HB_ACER_	1
2		52138005 35P	FUNCTION KEY BD	1
3		68142220 12P19	LCD 22'W_M220EW01 V2 (ACER_GLARE)_AUO_	1
4		51133025 83P	INTERFACE BD	1
5		71112300 61P	SCREW-MACHINE-Flat Washer- Pan-M3-6-Zn	4
6		71107300 82P0A	SCREW_MACHINE_NONE_ HEX_WASHER_HEAD_M3.8m	4
7		51143007 98P	POWER BD	1
8		71112300 61P	SCREW-MACHINE-Flat Washer- Pan-M3-6-Zn	3
9		71162400 81P0A	SCREW-MACHINE-Stor Washer- Pan-M4-8-Zn	1
10		71403301 03P0A	SCREW_DOUBLE THREAD_FLAT_ M3.1IDL_BLACK	2
11		77378112 81P0B	BRACKET ASSY_SHIELD(BN)_ ACER_R22BNSW_	1
	11-1	77457138 01P0A	BRACKET_SHIELDING COVER(BN)_ ACER-R22BNUM	1
	11-2	77465047 40P0A	INSULATOR_TOP_ACER_R22BUM-MI _PR750UL_94V	1
	11-3	77480003 01P0A	GROUNDING_GOLD_FINGER_ DCC18BNS_STAINLE	1
	11-4	77480003 00P0A	GROUNDING_GOLD FINGER_DCC_ BI7BNS_STAINL	4
12		71103300 62P0A	SCREW-MACHINE-FLAT HEAD-M3-6-N	4
13		71104300 42P0A	SCREW-MACHINE-FLAT HEAD-M3-4-N	2
14		77422382 01P0A	RC(BN)_#7100_ABS_UL94HB_ACER _R22BNUM-MI_	1
15		77426137 50P0A	STAND_RC_#7100_ABS_ UL94HB_ACER_R22BNUM-M	1
16		77426137 10P0A	COVER_R_HINGE_#7100_ABS- UL94HB_ACER_R19B	1
17		77426136 60P0A	COVER_L_HINGE_#7100_ABS_ UL94HB_ACER_R19	1
18		71103400 73P0A	SCREW_MACHINE_NONE_ FLAT_HEAD_M2.5*7_BLK_	4
19		77380012 40P0A	HINGE_STAND_NONE_ APHCFP01_2.0mm_ACER_	1
20		77377134 01P0A	BASE_ASSY_#7100_ABS_UL94HB _ACER_R22ANUM_	1
	20-1	77404127 81P0A	BASE_#7100_ABS_UL94HB _ACER_R22BNUM-MI_R2	1
	20-2	77404127 60P0A	BASE_RELEASE_BUTTON_#7100_ ABS_UL94HB_ACE	1
21		77487138 10P0A	BRACKET_BASE_ACER_ R22BNUM-MI_SPCC_T2.0	1
22		77420049 00P0A	RUBBER CUSHION_BASE_ SILICONE_BLK_ACER_T	1
23		77420049 10P0A	RUBBER CUSHION_BASE_ SILICONE_BLACK_ACER_	2
24		77426137 41P0A	STAND_FC_#7100_ABS_UL94HB _ACER_R22BNUM-M	1
25		71403300 81P0A	SCREW_DOUBLE THREAD _NO_WASHER_FLAT_HEAD	7
26		71403400 82P0A	SCREW-MACHINE-NONE _FLAT HEAD-M4-8-N	4
27		71403401 62P0A	SCREW_DOUBLE THREAD_NONE _FLAT HEAD_M4x16	6

Go to cover page

4.1 Assembly procedures:

S1

Connect the cable between power board(P802) and interface board (P301)
Connect the function key cable into interface board(P306)
Connect the FFC cable into interface board

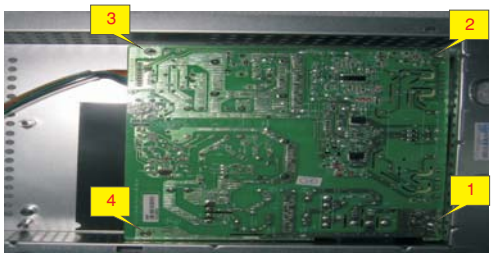


S2

Take a bracket chassis base on a protective cushion and stick an insulator on the specific position, take a power board and turn it over. Then, put it on the specific positions of bracket chassis base.

S3

Use a Phillips-head screwdriver screwed the No.1~4 screws till that power board and bracket chassis base firmly attached.(No1 screw size=M4x8; No2~4 screw size=M3x6; Torque=9~10KGFxCM).

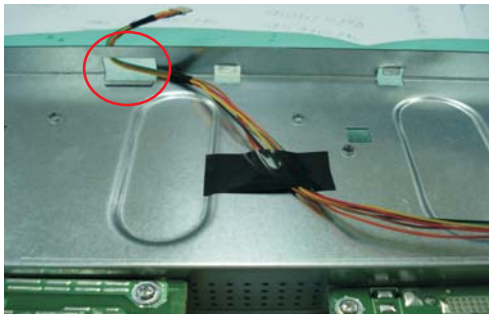


S4

Use a Phillips-head screwdriver screwed the No.1~4 screws till that interface board and bracket chassis base firmly attached.

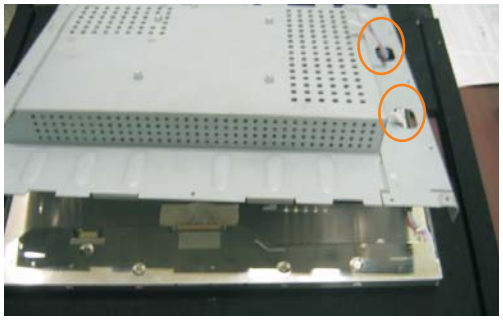
S5

Take the key function cable out from the hole shown as photo
Fix the function key cable with a PVC tape



S6

Turn the monitor faced down and put it on the Bracket Chassis module till both parts firmly
Take lamp cables out from the holes shown as the photo.

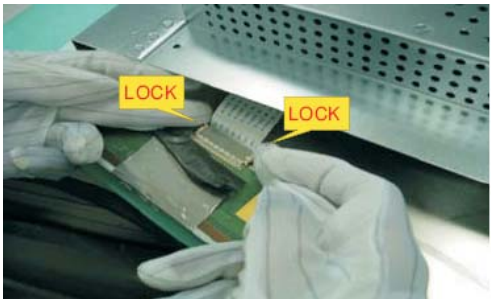


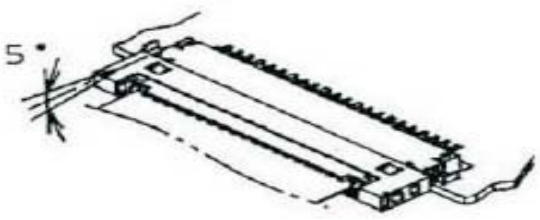
S7

Connect the FFC cable to the connector of the LCD panel.

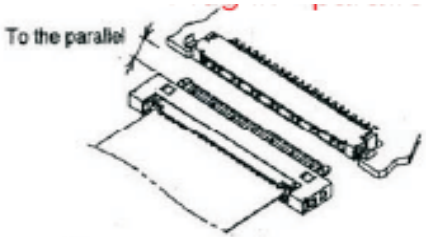
S8

Connect FFC cable to LCD panel. There are two locks over here when plugging in should be noticed





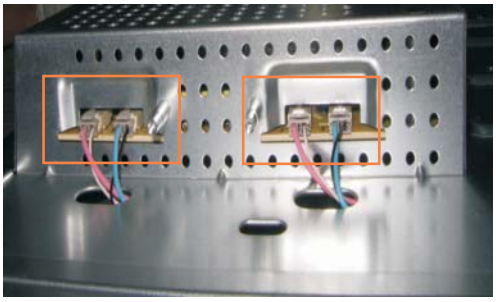
Plug in parallel direction



Angel < 5 degrees

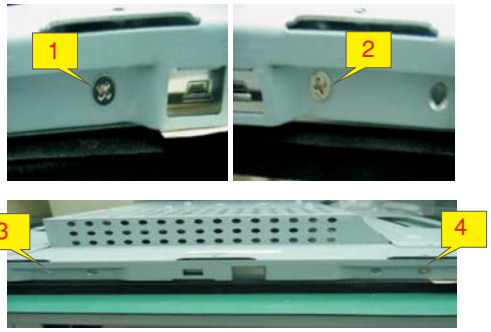
S9

Plug 8 lamp cables to the connectors of power board.(Both of right and left sides)



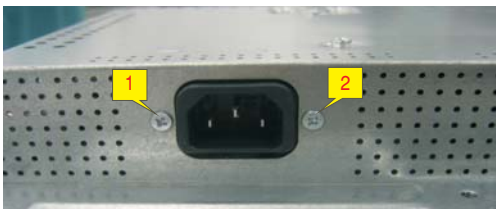
S10

Use a Phillips-head screwdriver screwed the No.1~4 screws on both side and assemble the LCD panel and bracket chassis module.
(No1~4 screw size=M3x6; Torque=3~4KGFxCM).



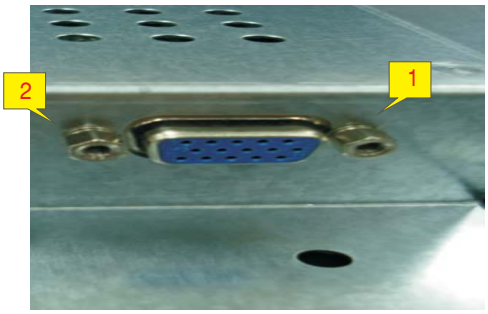
S11

Use a Phillips-head screwdriver screwed the No.1~2 screws.
(No1~2 screw size=M3x10; Torque=3~5KGFxCM).



S12

Use a Hex-head screwdriver screwed the DVI and D-SUB connectors (No.1~4Hex Nut screws Size=M3x8;Torque=3~5KGFxCM).

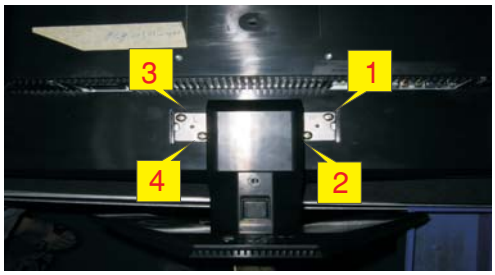


S13

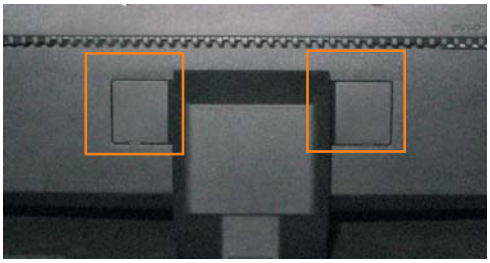
Take a key function board to hook with front bezel (No.1~2) and connect to key function cable.

S14 Put a rear cover on the assembled unit and press on force mechanisms locked and firmly attached.

S15 Assemble the stand upper side to the rear cover through the way of screwing 4 screws till both units firmly attached.
(No1~4 Screw Size=M4x10;
Torque=11~13KGFxCM).



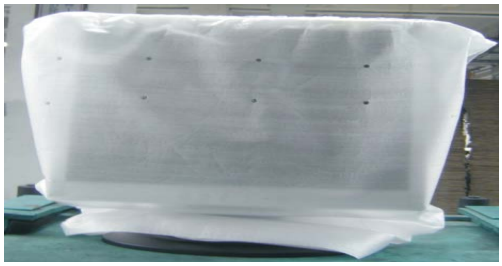
S16 Assemble the hinge cover into both two sides



S17 Stick a screen card on the front bezel with two tapes.

S18 Stick Vista and TC003 label on the correct position the same as below photo

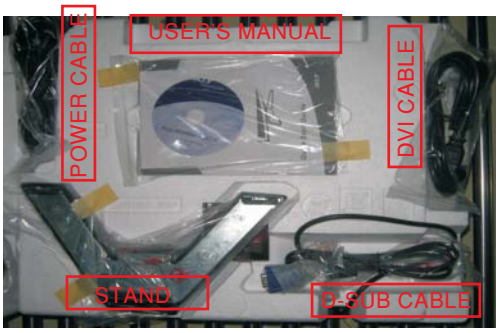
S19 Take a LDPE+EPE bag to cover the LCD monitor.
Take a PE bag to cover the stand base.



S20 Take two cushion foams; one is held the front side of LCD monitor, and another is held the back side.

S21

Put accessories of stand, DVI cable, and user's manual ,power cable on specific positions as photo below.



S22

Move previous assembled parts into the carton then stick Vista and feature label on the carton then packing the carton

4.2 Disassembly procedures

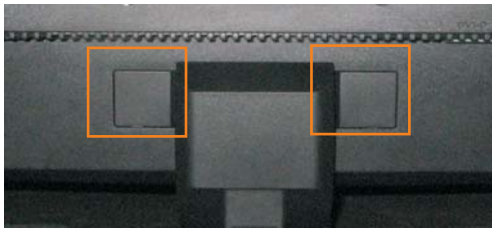
S1 Open the carton with a proper tool.

S2 Take out all accessories including D-SUB cable power cable, DVI cables, user's manual, and stand base and packing material from the carton.
(Note: It depends on whether users returning the accessories.)

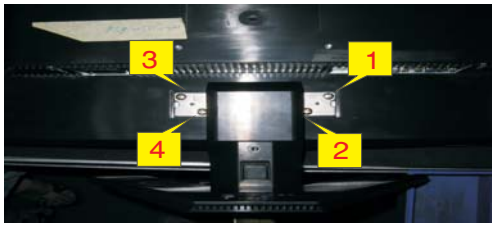
S3 Take off two cushion foams

S4 Put returned unit on a protective cushion,then remove LDPE+EPE bag.
Tear off tapes to remove the screen protector card then turn over the LCD monitor (screen faced down),

S5 Disassemble the stand cover.



S6 Use a Phillips-head screwdriver unscrew 4 screws to release the stand base.
(No1~4 Screw Size=M4x10;
Torque=11~13KGFxCM).



S7 Turn over the LCD monitor (screen faced up).

S8

Place cloth on the panel where you are working on to protect the panel. Continuously, wedge your finger between the front bezel and the panel, then pry up on the front bezel to disengage the locking mechanism.

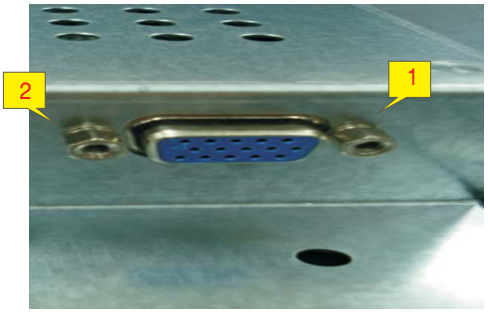
Work your way along the front bezel to disengage all the locking mechanism.

S9

Unhook the key function board from rear bezel, disconnect the key function cable

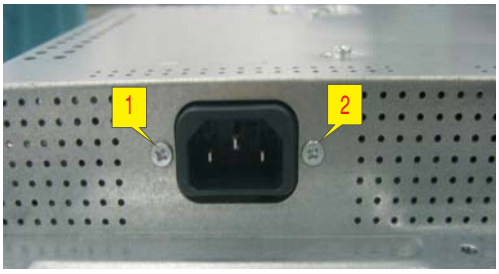
S10

Use a Hex-head screwdriver unscrewed 4 screws to release the DVI and D-SUB connectors (No1~4Hex Nut screws Size=M3x8;Torque=3~5KGFxCM).



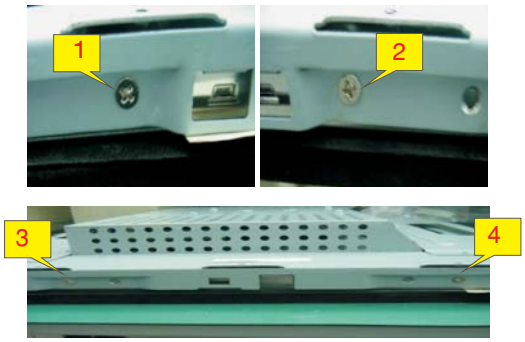
S11

Use a Phillips-head screwdriver unscrewed the No.1~2 screws to lease power plug (No1~2 screw size=M3x10; Torque=3~5KGFxCM).



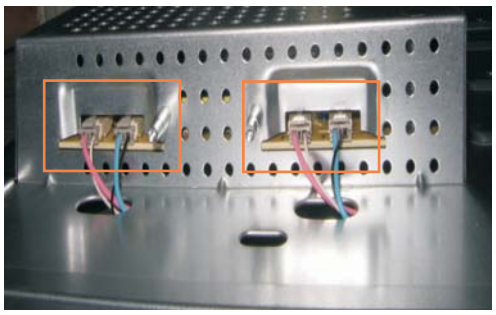
S12

Use a Phillips-head screwdriver unscrewed the No.1~4 screws to disassemble the LCD panel and bracket chassis module.
(No1~4 screw size=M3x6; Torque=3~4KGFxCM).



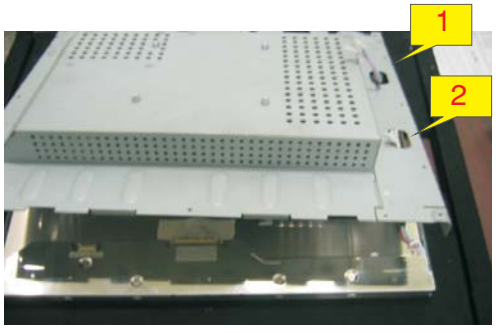
S13

Unplug 4 lamp cables (No. 1~4).



S14

Take out lamp cables right through the No.1 and 2 square holes and separate the bracket chassis module and LCD panel apart.



S15

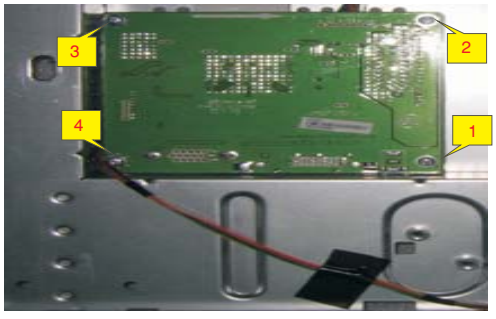
Disconnect the FFC cable to the connector of panel.
Use finger to push the lock according to arrow direction then take out the FFC cable

S16

Examine the panel surface accoring to inspection criteria. Put it aside.

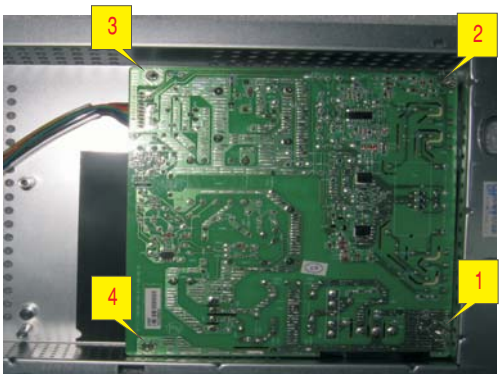
S17

Use a Phillips-head screwdriver unscrewed the No.1~4 screws to release the interface board.
(No1~4 screw size=M3x6; Torque=9~10KGFxCM).



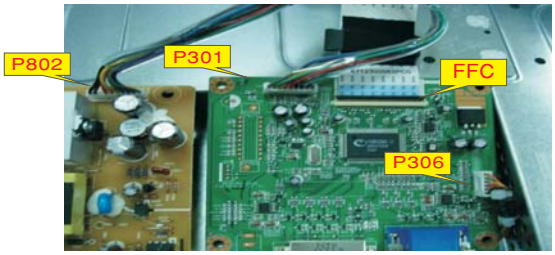
S18

Use a Phillips-head screwdriver unscrewed the No.1~4 screws to disassemble the power board. (No1 screw size=M4x8; No2~4 screw size=M3x6; Torque=9~10KGFxCM).



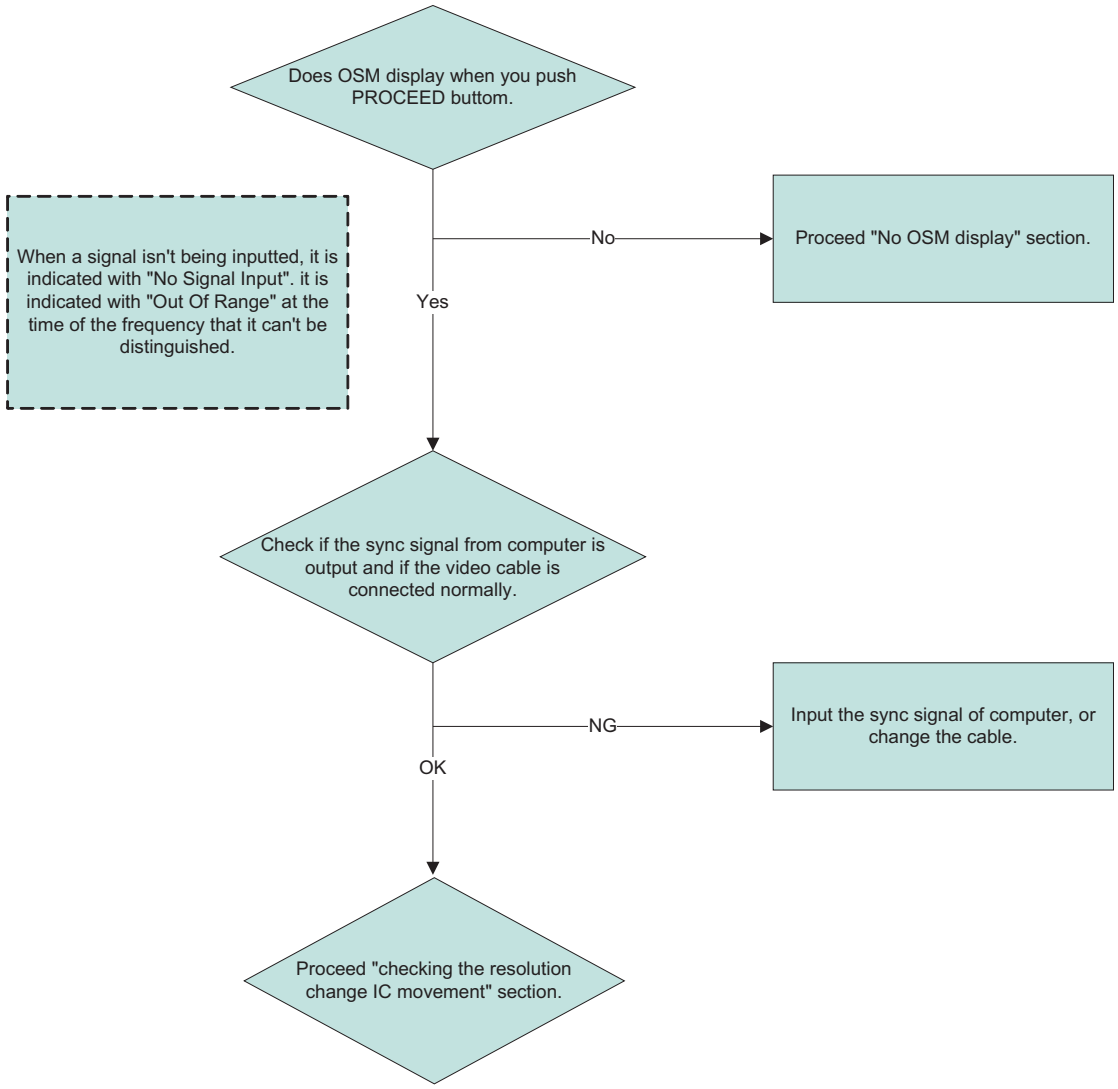
S19

Disconnect the FFC, P301, and function key cables to connectors of interface board.

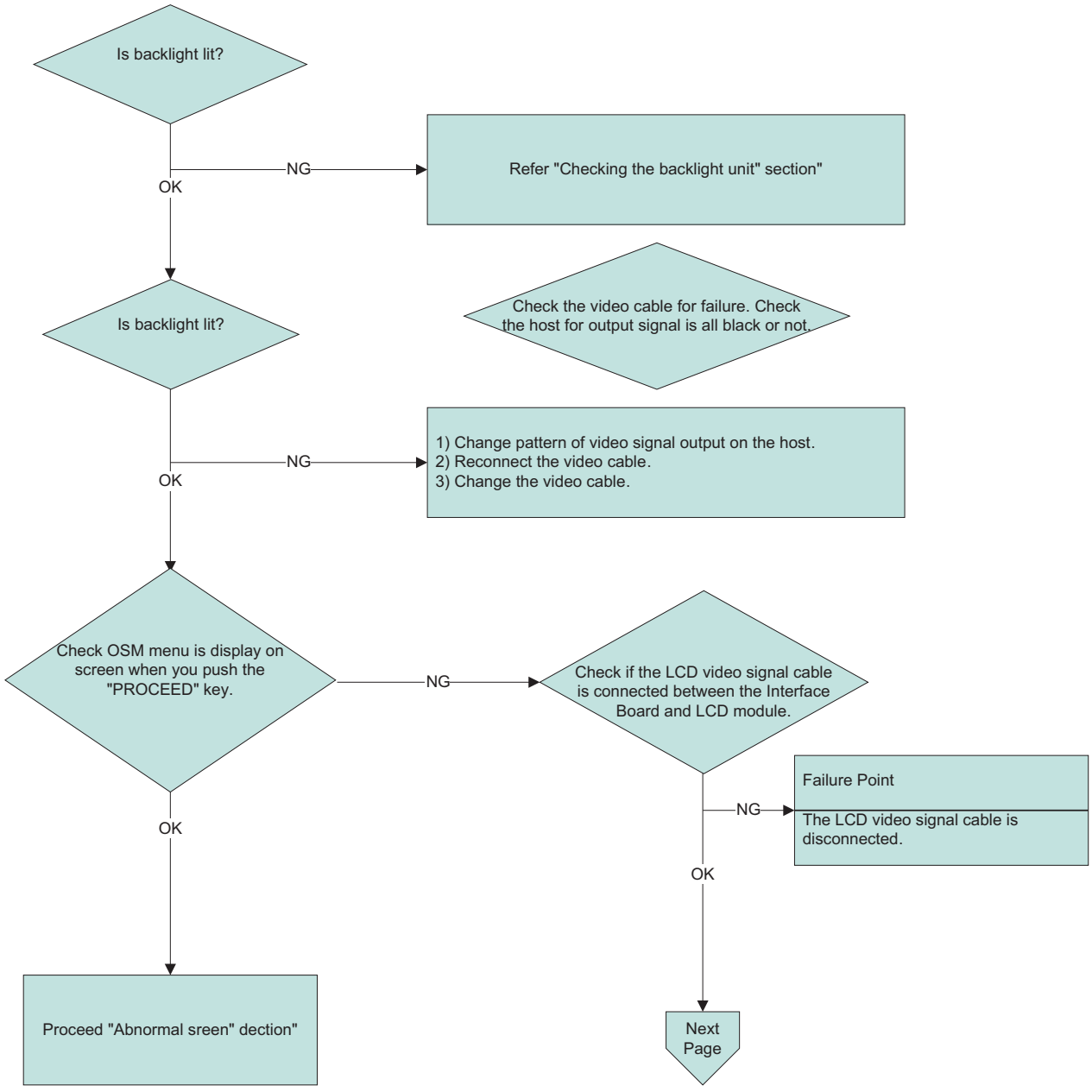


Go to cover page

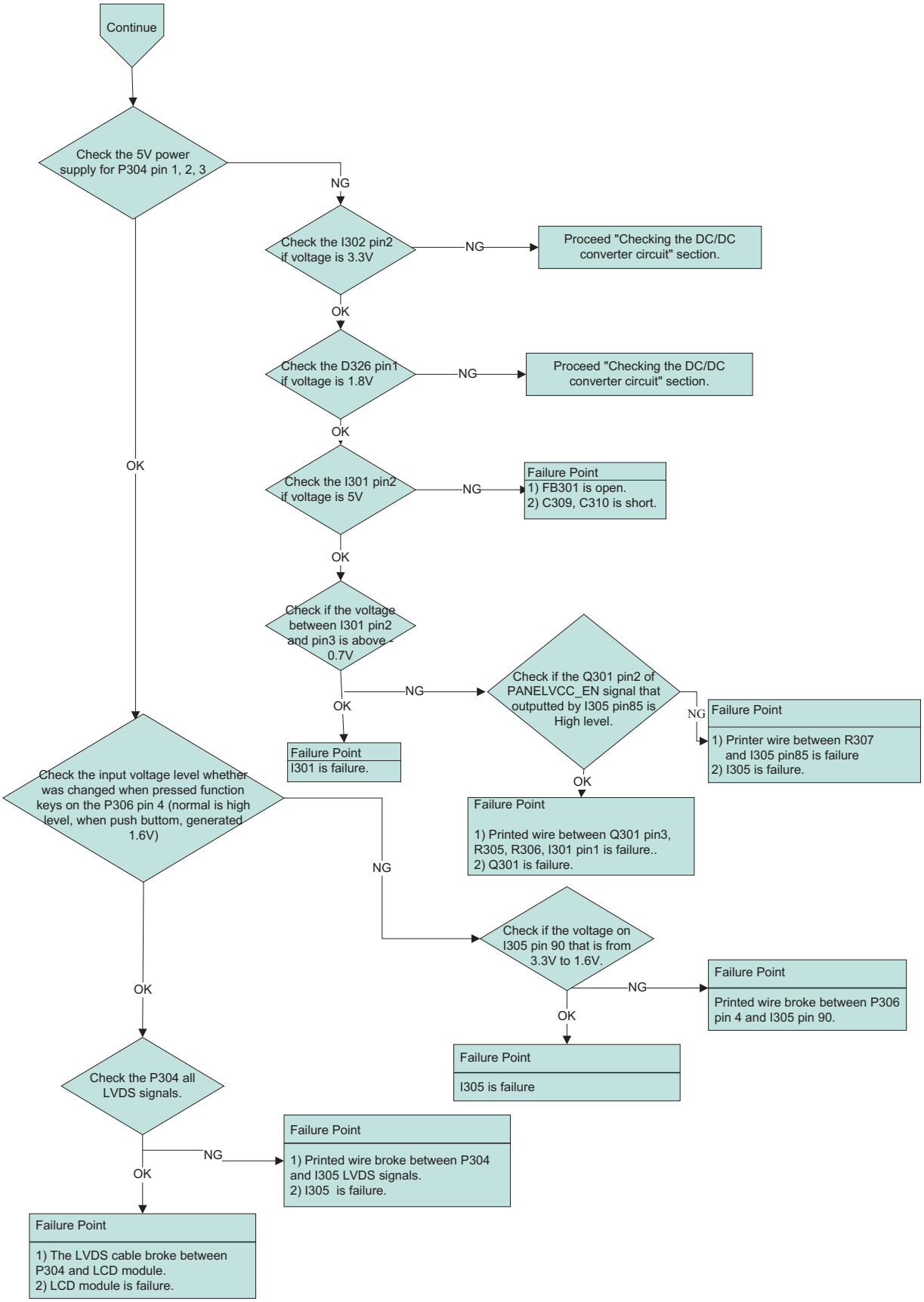
5.1 No.display of screen (Screen is black, color of LED is amber)


Does OSM display when you push PROCEED buttom.
No
Proceed "No OSM display" section.
When a signal isn't being inputted, it is indicated with "No Signal Input". it is indicated with "Out Of Range" at the time of the frequency that it can't be distinguished.
Yes
Check if the sync signal from computer is output and if the video cable is connected normally.
NG
Input the sync signal of computer, or change the cable.
OK
Proceed "checking the resolution change IC movement" section.

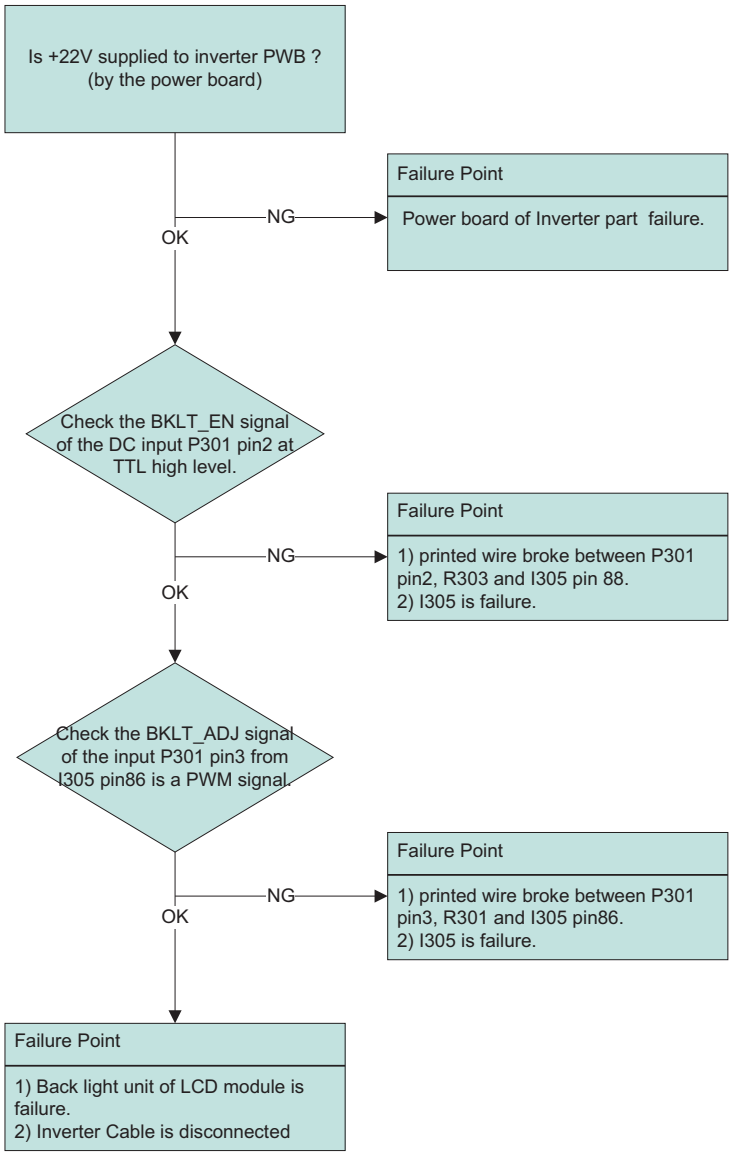
5.2 Nothing display on screen (screen is black, color of LED is blue)


Is backlight lit?
NG
Refer "Checking the backlight unit" section
OK
Is backlight lit?
Check the video cable for failure. Check the host for output signal is all black or not.
NG
1) Change pattern of video signal output on the host.
2) Reconnect the video cable.
3) Change the video cable.
OK
Check OSM menu is display on screen when you push the "PROCEED" key.
NG
Check if the LCD video signal cable is connected between the Interface Board and LCD module.
Failure Point
NG
The LCD video signal cable is disconnected.
OK
OK
Proceed "Abnormal sreen" dection"
Next Page

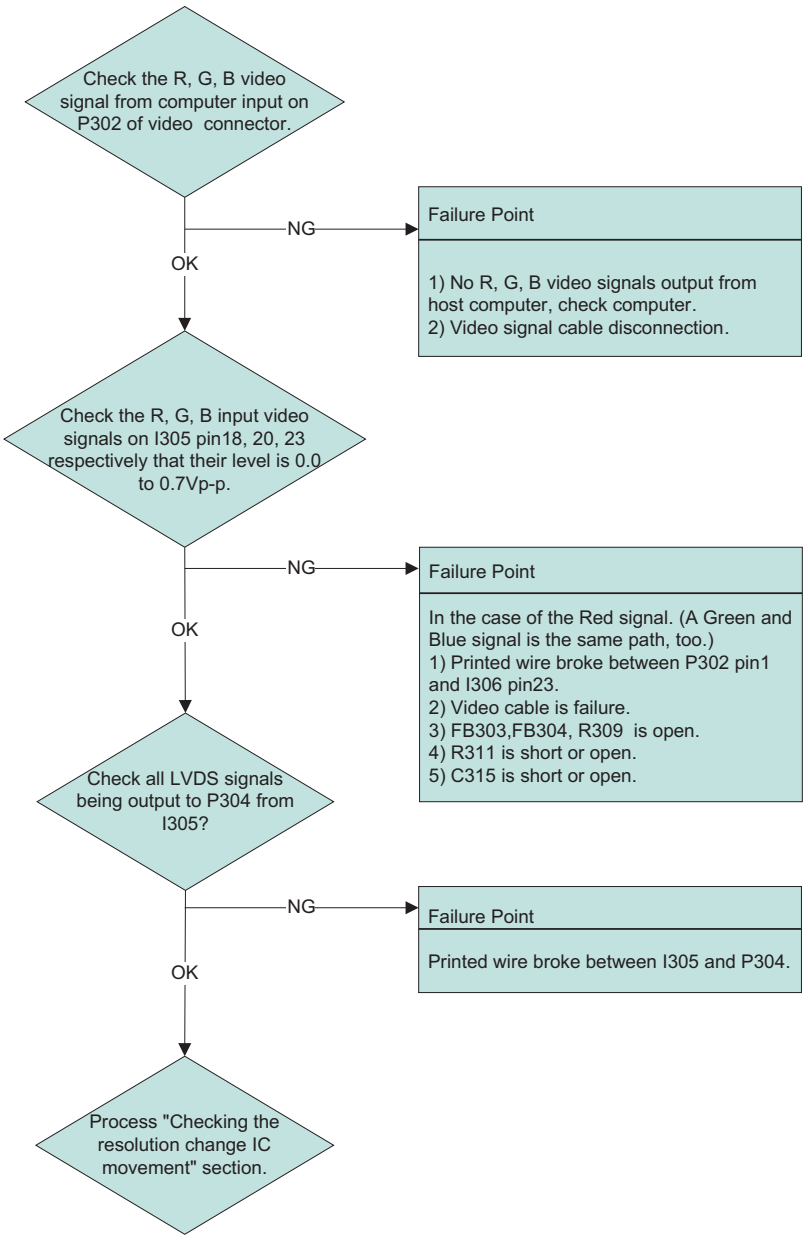
5.2 Nothing display on screen (screen is black, color of LED is blue) continued


Continue
Check the 5V power supply for P304 pin 1, 2, 3
NG
Check the I302 pin2 if voltage is 3.3V
NG
Proceed "Checking the DC/DC converter circuit" section.
OK
Check the D326 pin1 if voltage is 1.8V
NG
Proceed "Checking the DC/DC converter circuit" section.
OK
Check the I301 pin2 if voltage is 5V
NG
Failure Point
1) FB301 is open.
2) C309, C310 is short.
OK
Check if the voltage between I301 pin2 and pin3 is above 0.7V
NG
Check if the Q301 pin2 of PANELVCC_EN signal that outputted by I305 pin85 is High level.
NG
Failure Point
1) Printer wire between R307 and I305 pin85 is failure
2) I305 is failure.
OK
Failure Point
1) Printed wire between Q301 pin3, R305, R306, I301 pin1 is failure..
2) Q301 is failure.
OK
Failure Point
I301 is failure.
OK
Check the input voltage level whether was changed when pressed function keys on the P306 pin 4 (normal is high level, when push buttom, generated 1.6V)
NG
Check if the voltage on I305 pin 90 that is from 3.3V to 1.6V.
NG
Failure Point
Printed wire broke between P306 pin 4 and I305 pin 90.
OK
Failure Point
I305 is failure
OK
Check the P304 all LVDS signals.
NG
Failure Point
1) Printed wire broke between P304 and I305 LVDS signals.
2) I305 is failure.
OK
Failure Point
1) The LVDS cable broke between P304 and LCD module.
2) LCD module is failure.

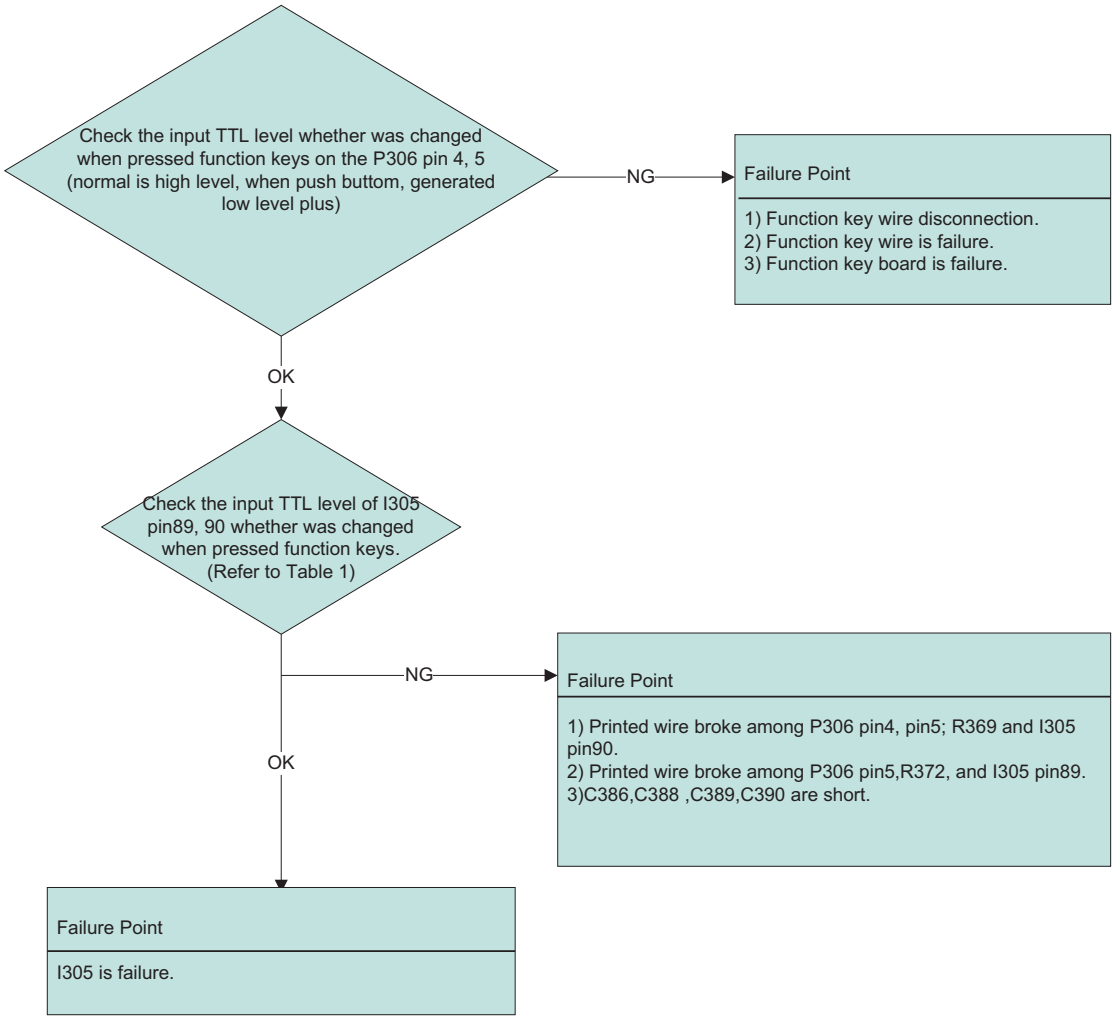
5.3 Checking the back light unit


Is +22V supplied to inverter PWB ?
(by the power board)
NG
Failure Point
Power board of Inverter part failure.
OK
Check the BKLT_EN signal of the DC input P301 pin2 at TTL high level.
NG
Failure Point
1) printed wire broke between P301 pin2, R303 and I305 pin 88.
2) I305 is failure.
OK
Check the BKLT_ADJ signal of the input P301 pin3 from I305 pin86 is a PWM signal.
NG
Failure Point
1) printed wire broke between P301 pin3, R301 and I305 pin86.
2) I305 is failure.
OK
Failure Point
1) Back light unit of LCD module is failure.
2) Inverter Cable is disconnected

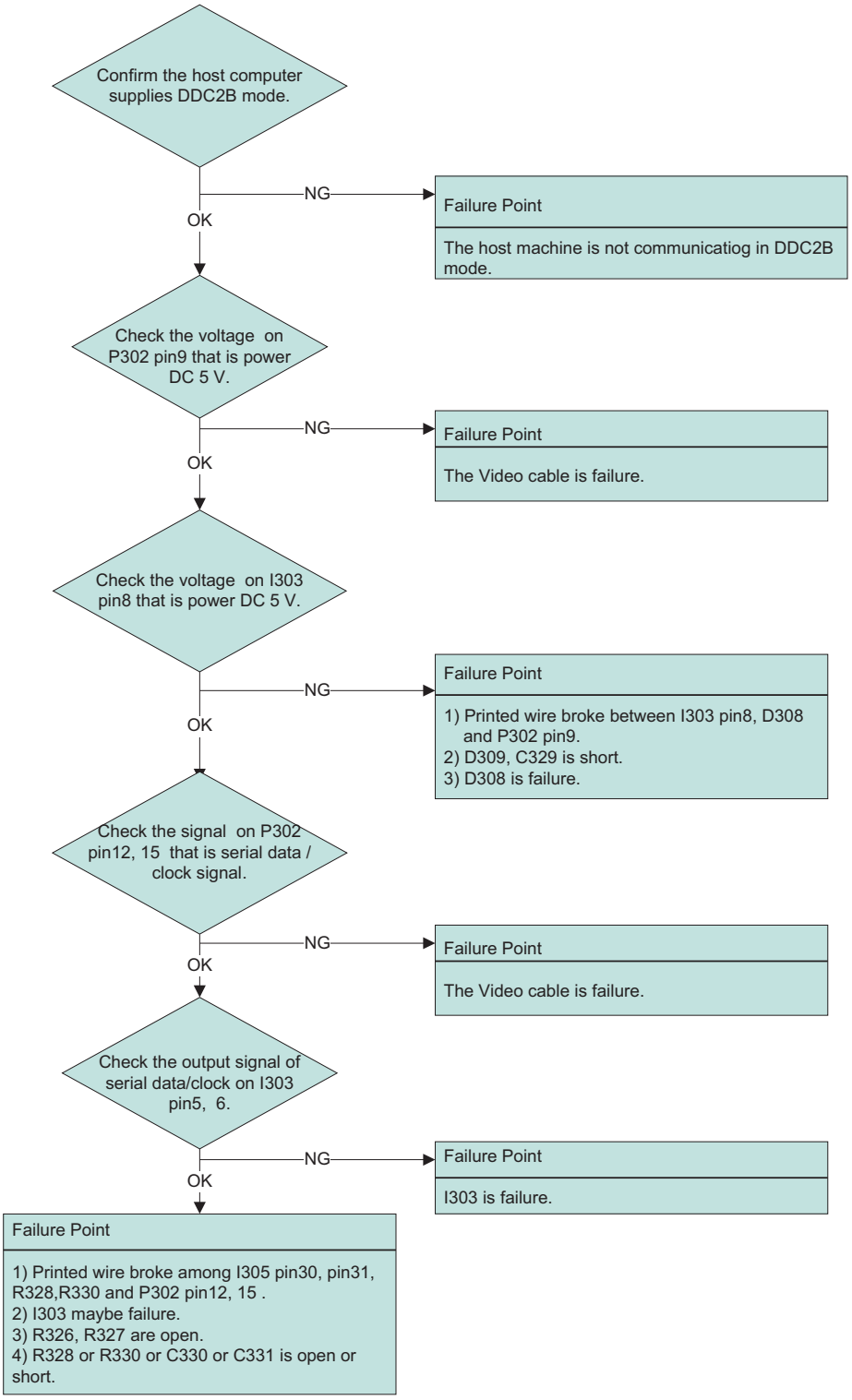
5.4 Abnormal screen for VGA


Check the R, G, B video signal from computer input on P302 of video connector.
NG
Failure Point
1) No R, G, B video signals output from host computer, check computer.
2) Video signal cable disconnection.
OK
Check the R, G, B input video signals on I305 pin18, 20, 23 respectively that their level is 0.0 to 0.7Vp-p.
NG
Failure Point
In the case of the Red signal. (A Green and Blue signal is the same path, too.)
1) Printed wire broke between P302 pin1 and I306 pin23.
2) Video cable is failure.
3) FB303,FB304, R309 is open.
4) R311 is short or open.
5) C315 is short or open.
OK
Check all LVDS signals being output to P304 from I305?
NG
Failure Point
Printed wire broke between I305 and P304.
OK
Process "Checking the resolution change IC movement" section.

5.5 Abnormal OSM display adjust problem

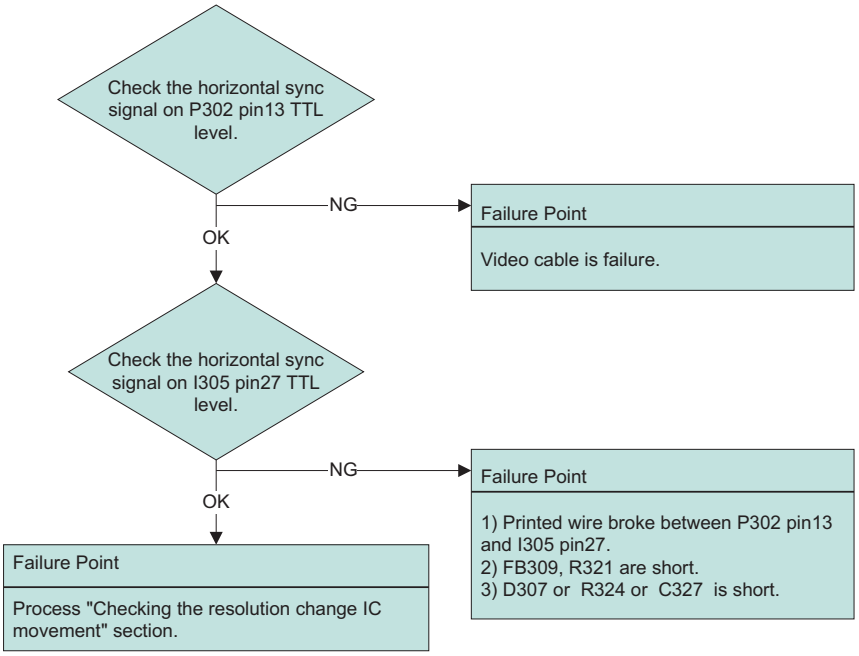

Check the input TTL level whether was changed when pressed function keys on the P306 pin 4, 5 (normal is high level, when push buttom, generated low level plus)
NG
Failure Point
1) Function key wire disconnection.
2) Function key wire is failure.
3) Function key board is failure.
OK
Check the input TTL level of I305 pin89, 90 whether was changed when pressed function keys. (Refer to Table 1)
NG
Failure Point
1) Printed wire broke among P306 pin4, pin5; R369 and I305 pin90.
2) Printed wire broke among P306 pin5,R372, and I305 pin89.
3)C386,C388 ,C389,C390 are short.
OK
Failure Point
I305 is failure.

5.6 Abnormal plug and play operation for VGA

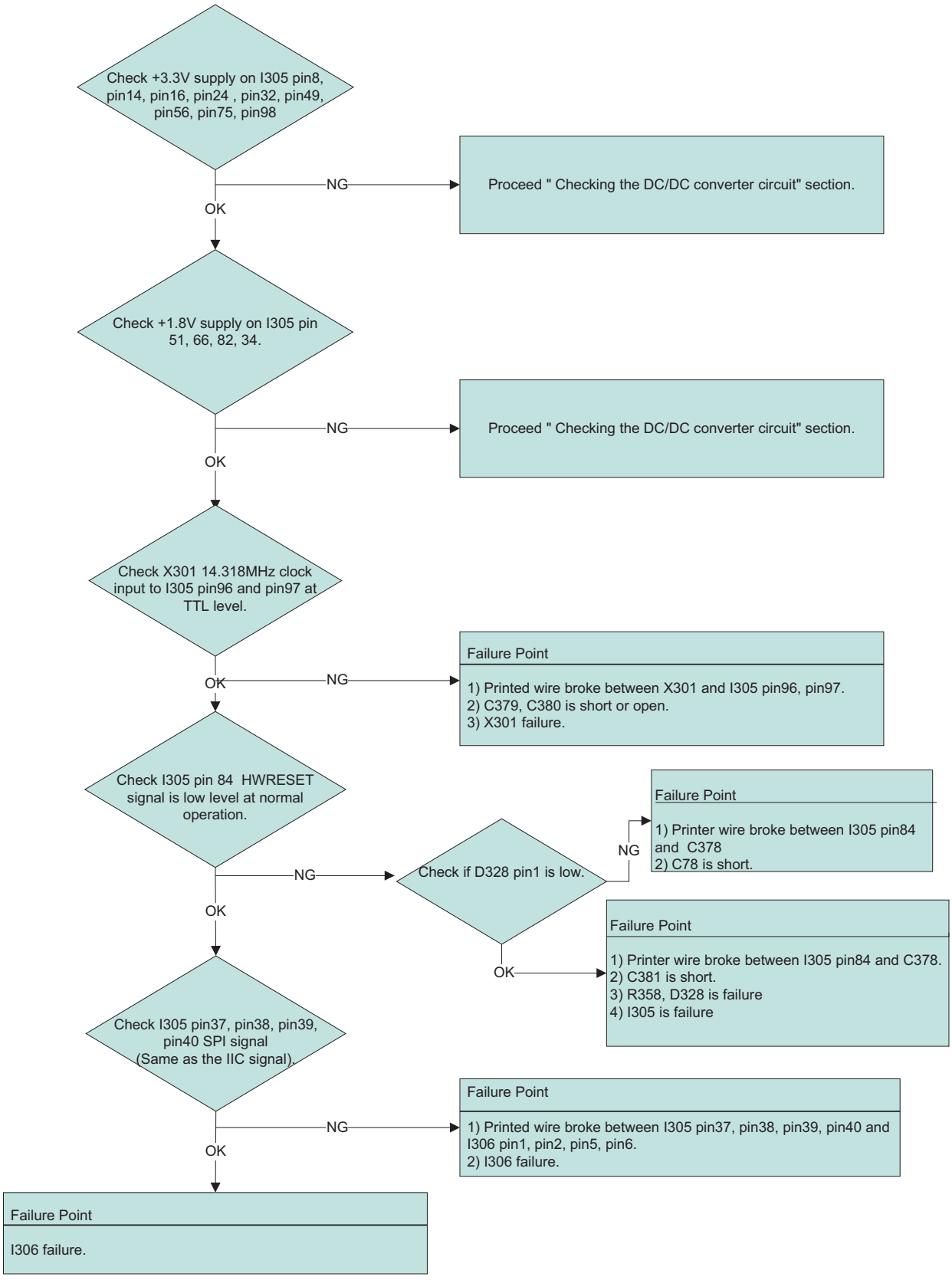

Confirm the host computer supplies DDC2B mode.
NG
Failure Point
The host machine is not communicatiog in DDC2B mode.
OK
Check the voltage on P302 pin9 that is power DC 5 V.
NG
Failure Point
The Video cable is failure.
OK
Check the voltage on I303 pin8 that is power DC 5 V.
NG
Failure Point
1) Printed wire broke between I303 pin8, D308 and P302 pin9.
2) D309, C329 is short.
3) D308 is failure.
OK
Check the signal on P302 pin12, 15 that is serial data / clock signal.
NG
Failure Point
The Video cable is failure.
OK
Check the output signal of serial data/clock on I303 pin5, 6.
NG
Failure Point
I303 is failure.
OK
Failure Point
1) Printed wire broke among I305 pin30, pin31, R328,R330 and P302 pin12, 15 .
2) I303 maybe failure.
3) R326, R327 are open.
4) R328 or R330 or C330 or C331 is open or short.

5.7 Checking the interface circuit of sync signal

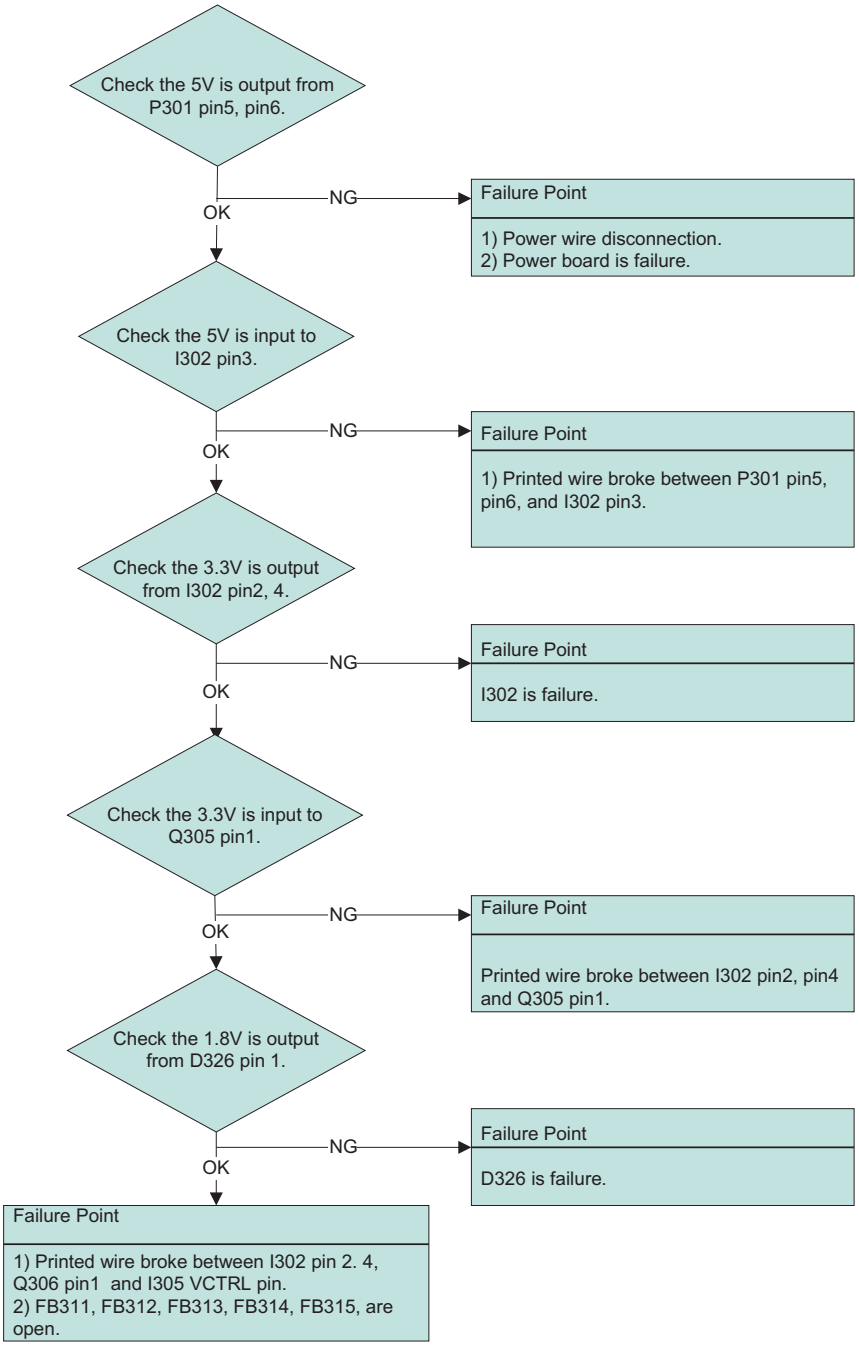
5.7.1 Checking the control circuit of horizontal sync pulse


Check the horizontal sync signal on P302 pin13 TTL level.
NG
Failure Point
Video cable is failure.
OK
Check the horizontal sync signal on I305 pin27 TTL level.
NG
Failure Point
1) Printed wire broke between P302 pin13 and I305 pin27.
2) FB309, R321 are short.
3) D307 or R324 or C327 is short.
OK
Failure Point
Process "Checking the resolution change IC movement" section.

5.8 Checking the resolution change IC movement

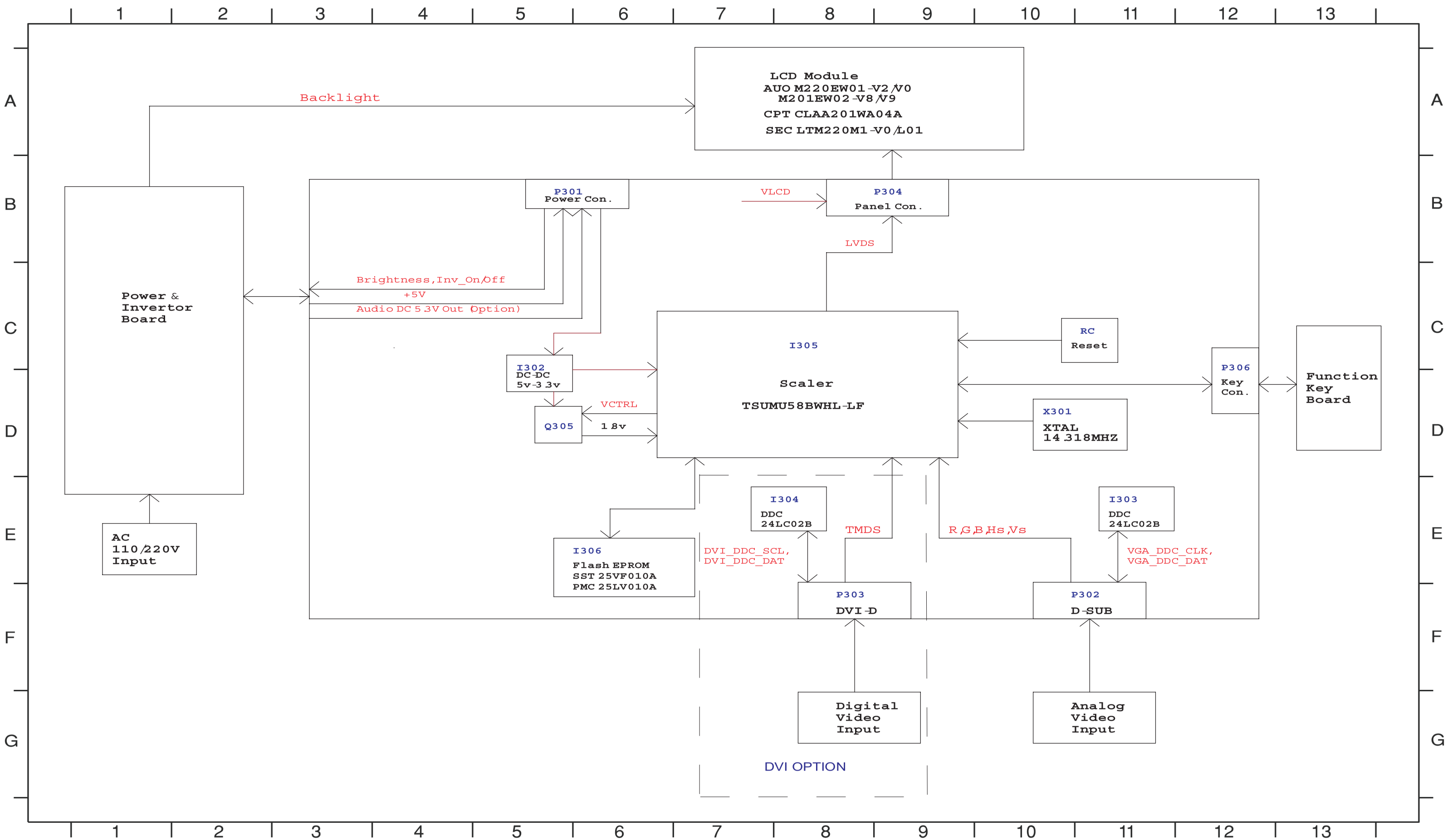

Check +3.3V supply on I305 pin8, pin14, pin16, pin24 , pin32, pin49, pin56, pin75, pin98
NG
Proceed " Checking the DC/DC converter circuit" section.
OK
Check +1.8V supply on I305 pin 51, 66, 82, 34.
NG
Proceed " Checking the DC/DC converter circuit" section.
OK
Check X301 14.318MHz clock input to I305 pin96 and pin97 at TTL level.
OK
NG
Failure Point
1) Printed wire broke between X301 and I305 pin96, pin97.
2) C379, C380 is short or open.
3) X301 failure.
Check I305 pin 84 HWRESET signal is low level at normal operation.
NG
Check if D328 pin1 is low.
NG
Failure Point
1) Printer wire broke between I305 pin84 and C378
2) C78 is short.
OK
Failure Point
1) Printer wire broke between I305 pin84 and C378.
2) C381 is short.
3) R358, D328 is failure
4) I305 is failure
OK
Check I305 pin37, pin38, pin39, pin40 SPI signal (Same as the IIC signal).
NG
Failure Point
1) Printed wire broke between I305 pin37, pin38, pin39, pin40 and I306 pin1, pin2, pin5, pin6.
2) I306 failure.
OK
Failure Point
I306 failure.

5.9 Checking the DC/DC converter circuit


Check the 5V is output from P301 pin5, pin6.
NG
Failure Point
1) Power wire disconnection.
2) Power board is failure.
OK
Check the 5V is input to I302 pin3.
NG
Failure Point
1) Printed wire broke between P301 pin5, pin6, and I302 pin3.
OK
Check the 3.3V is output from I302 pin2, 4.
NG
Failure Point
I302 is failure.
OK
Check the 3.3V is input to Q305 pin1.
NG
Failure Point
Printed wire broke between I302 pin2, pin4 and Q305 pin1.
OK
Check the 1.8V is output from D326 pin 1.
NG
Failure Point
D326 is failure.
OK
Failure Point
1) Printed wire broke between I302 pin 2. 4, Q306 pin1 and I305 VCTRL pin.
2) FB311, FB312, FB313, FB314, FB315, are open.

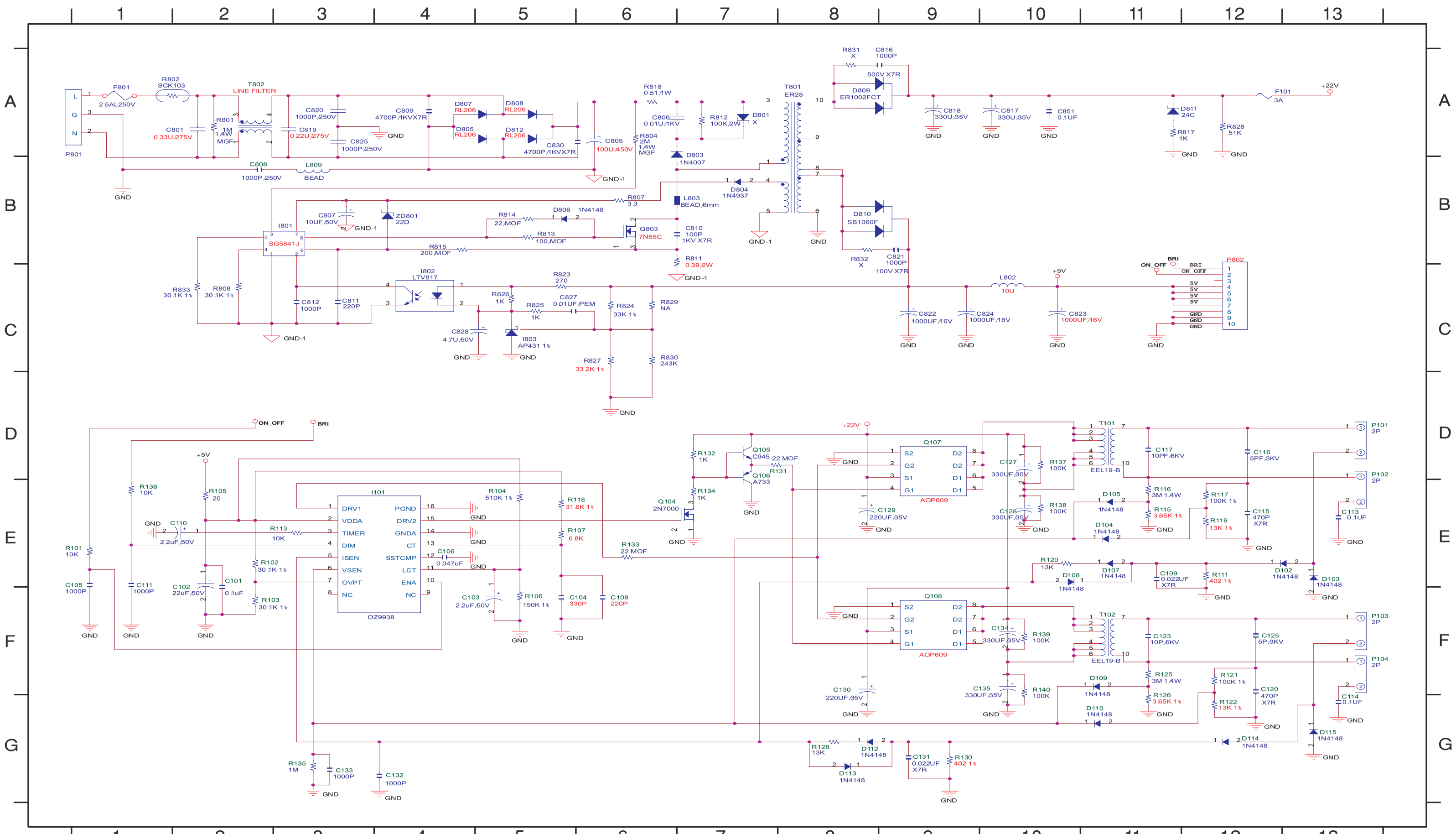
6. Schematics and Layouts:

6.1 ACER_LCD_X223W_SCHEMATICS_BLOCK DIAGRAM



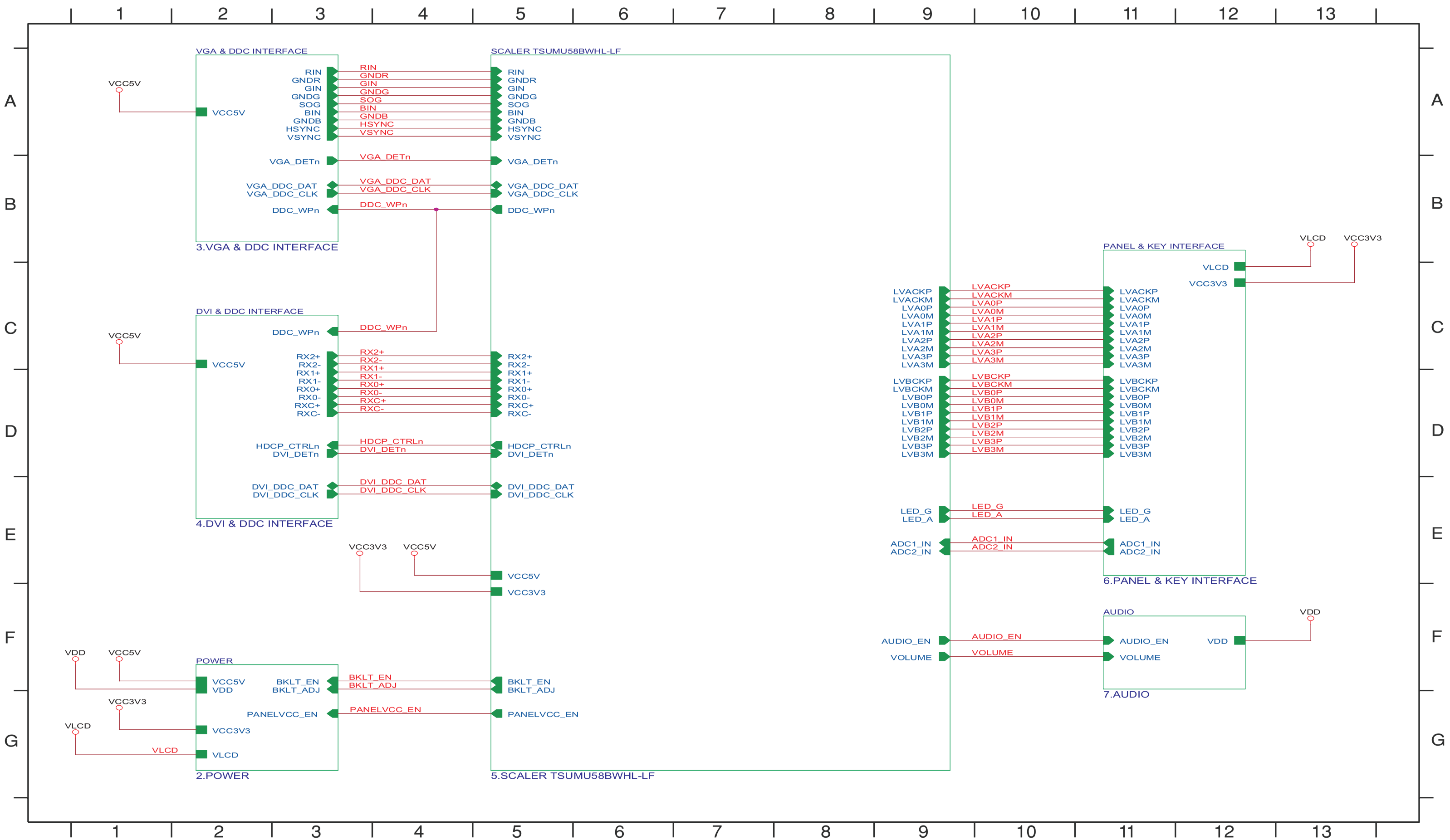
PCB No. 6832190100P01

6.2 ACER_LCD_X223W_SCHEMATICS_POWER BOARD



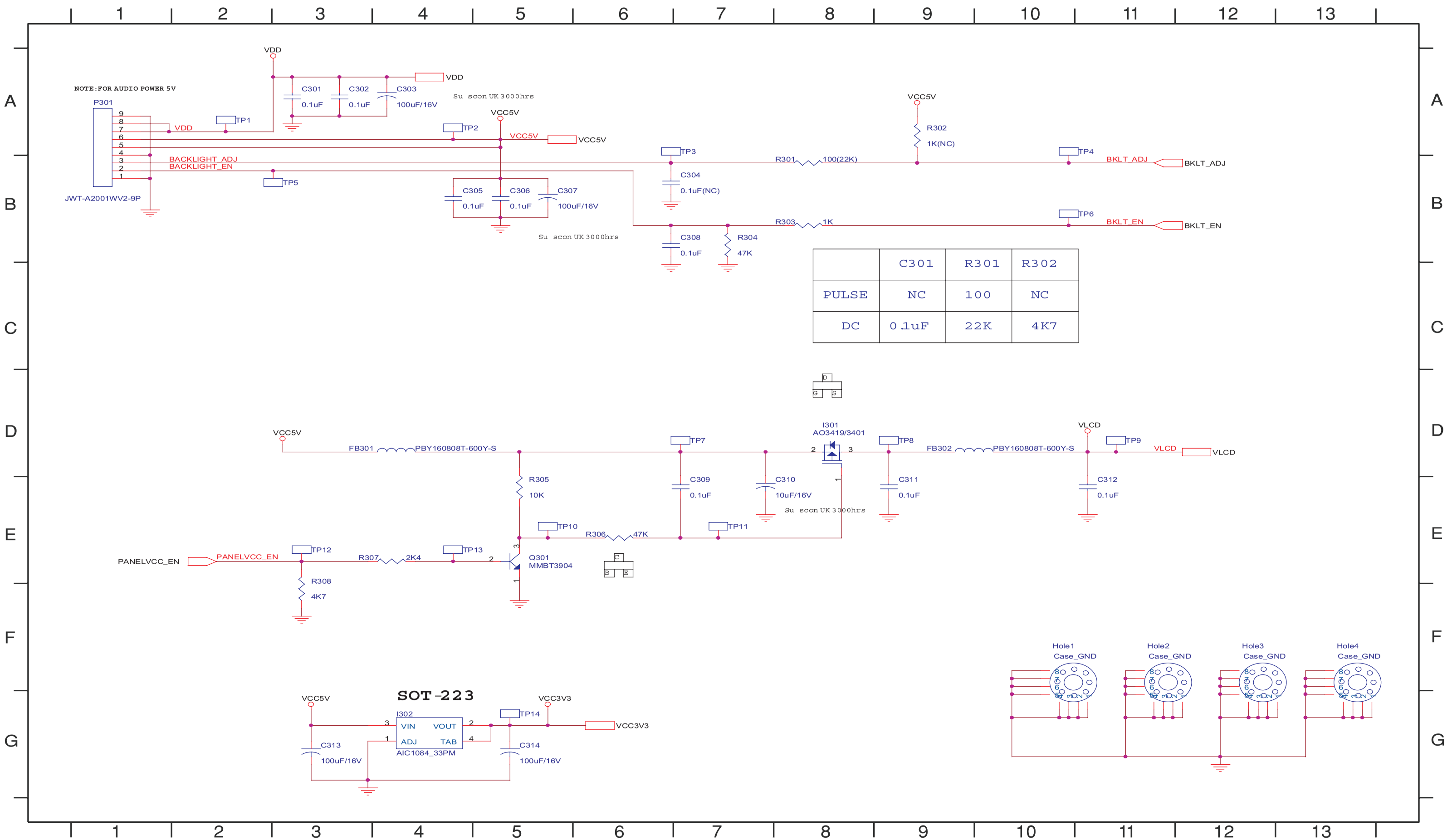
PCB No. 6832192600P01

6.3 ACER_LCD_X223W_SCHEMATICS_INTERFACE_TOP



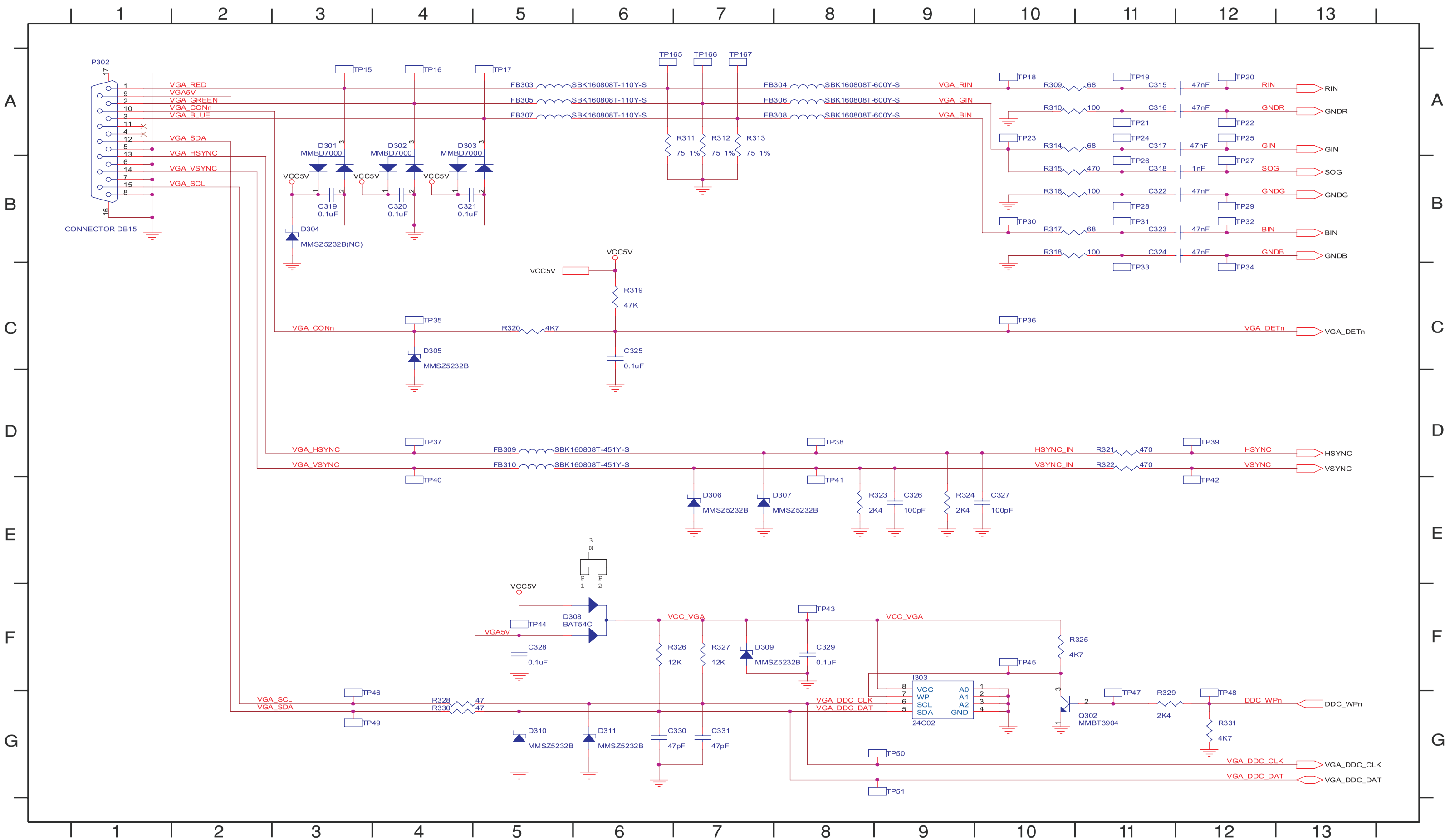
PCB No. 6832190100P01

6.4 ACER_LCD_X223W_SCHEMATICS_INTERFACE POWER



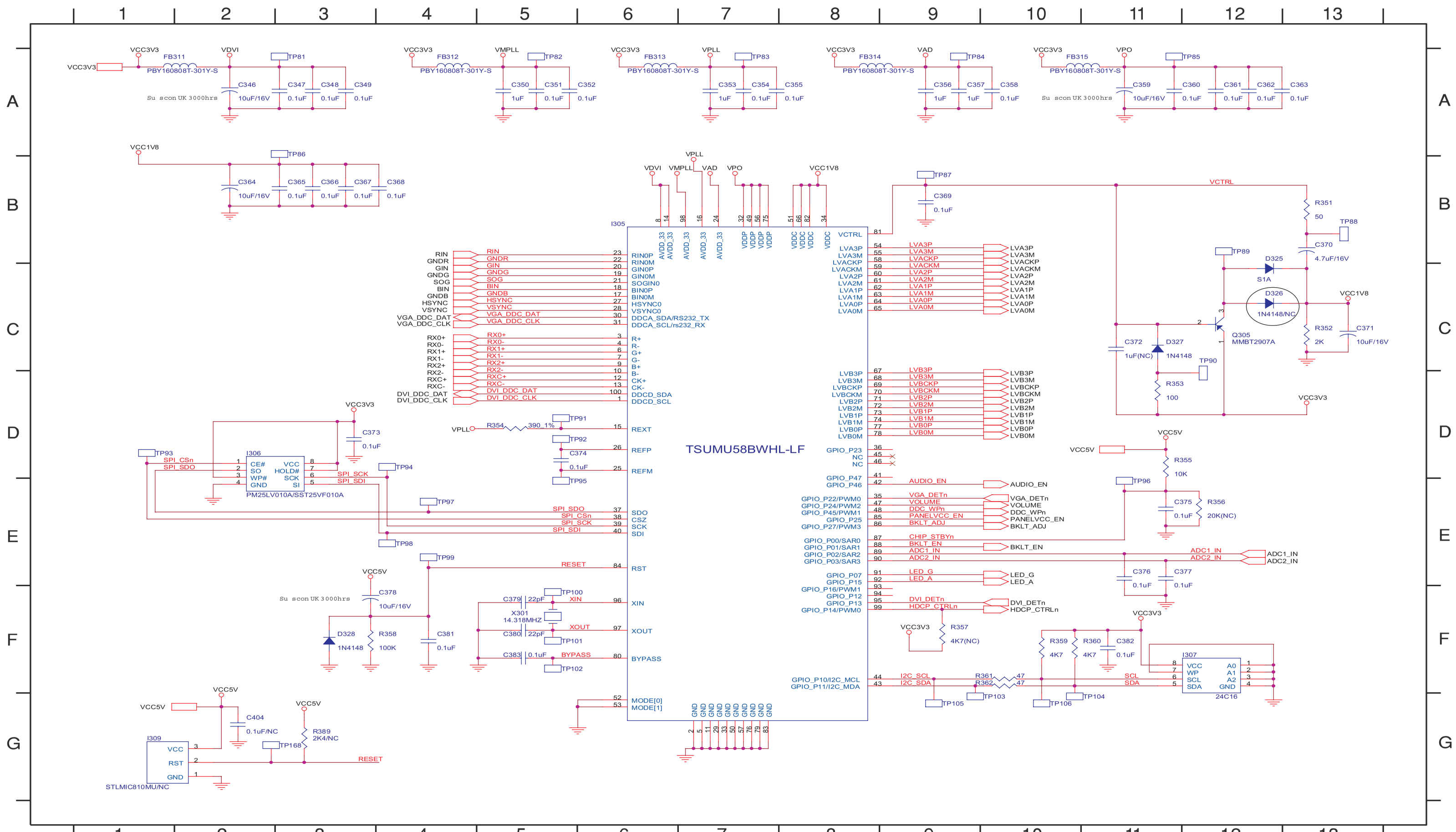
PCB No. 6832190100P01

6.5 ACER_LCD_X223W_SCHEMATICS_INTERFACE BD_VGA



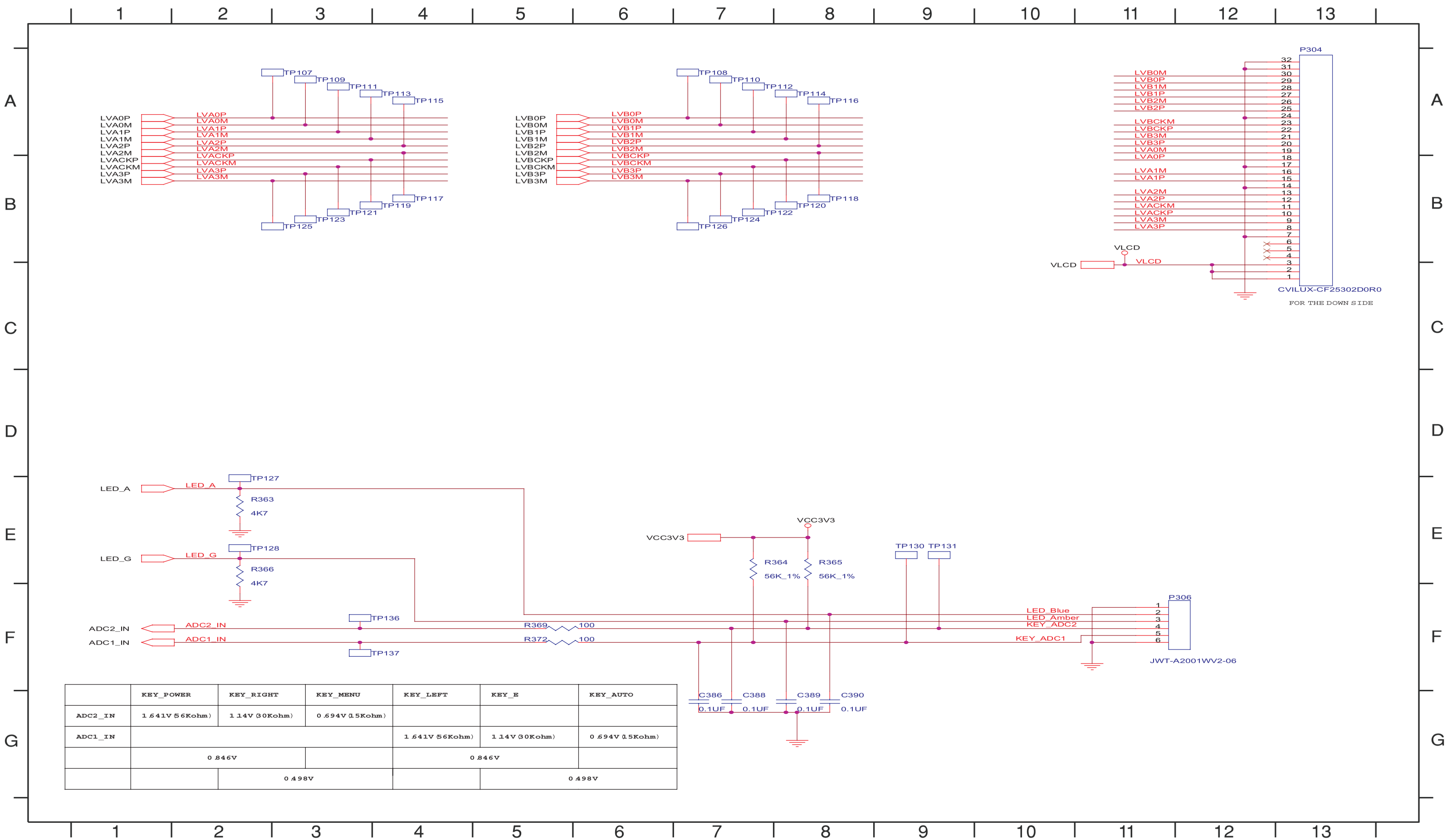
PCB No. 6832190100P01

6.6 ACER_LCD_X223W_SCHEMATICS_INTERFACE BD_SCALER



PCB No. 6832190100P01

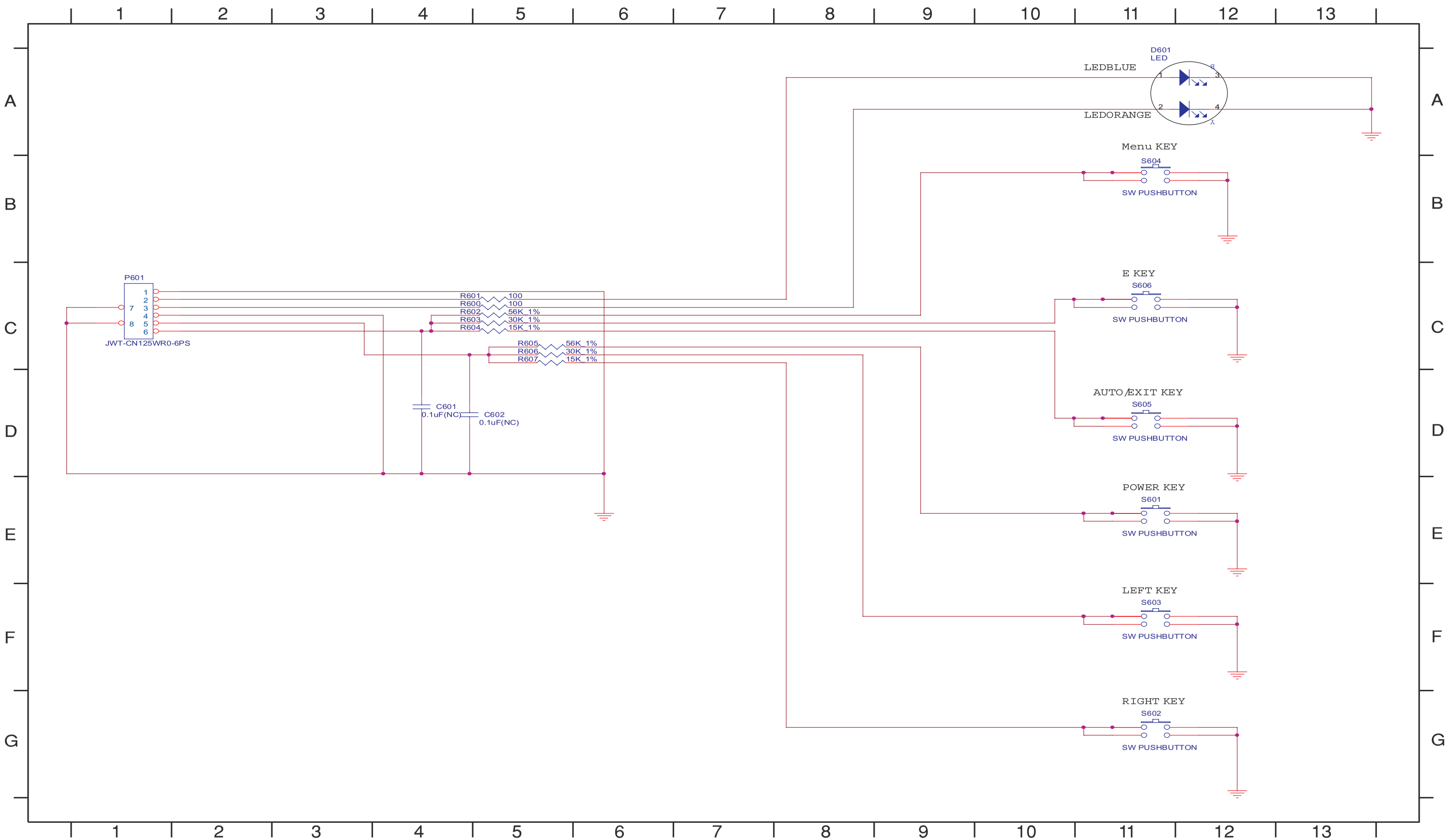
6.7 ACER_LCD_X223W_SCHEMATICS_INTERFACE BD_KEY & PANEL INTERFACE



	KEY_POWER	KEY_RIGHT	KEY_MENU	KEY_LEFT	KEY_E	KEY_AUTO
ADC2_IN	1.641V 56Kohm)	1.14V 30Kohm)	0.694V 15Kohm)			
ADC1_IN				1.641V 56Kohm)	1.14V 30Kohm)	0.694V 15Kohm)
	0.846V			0.846V		
		0.498V			0.498V	

PCB No. 6832190100P01

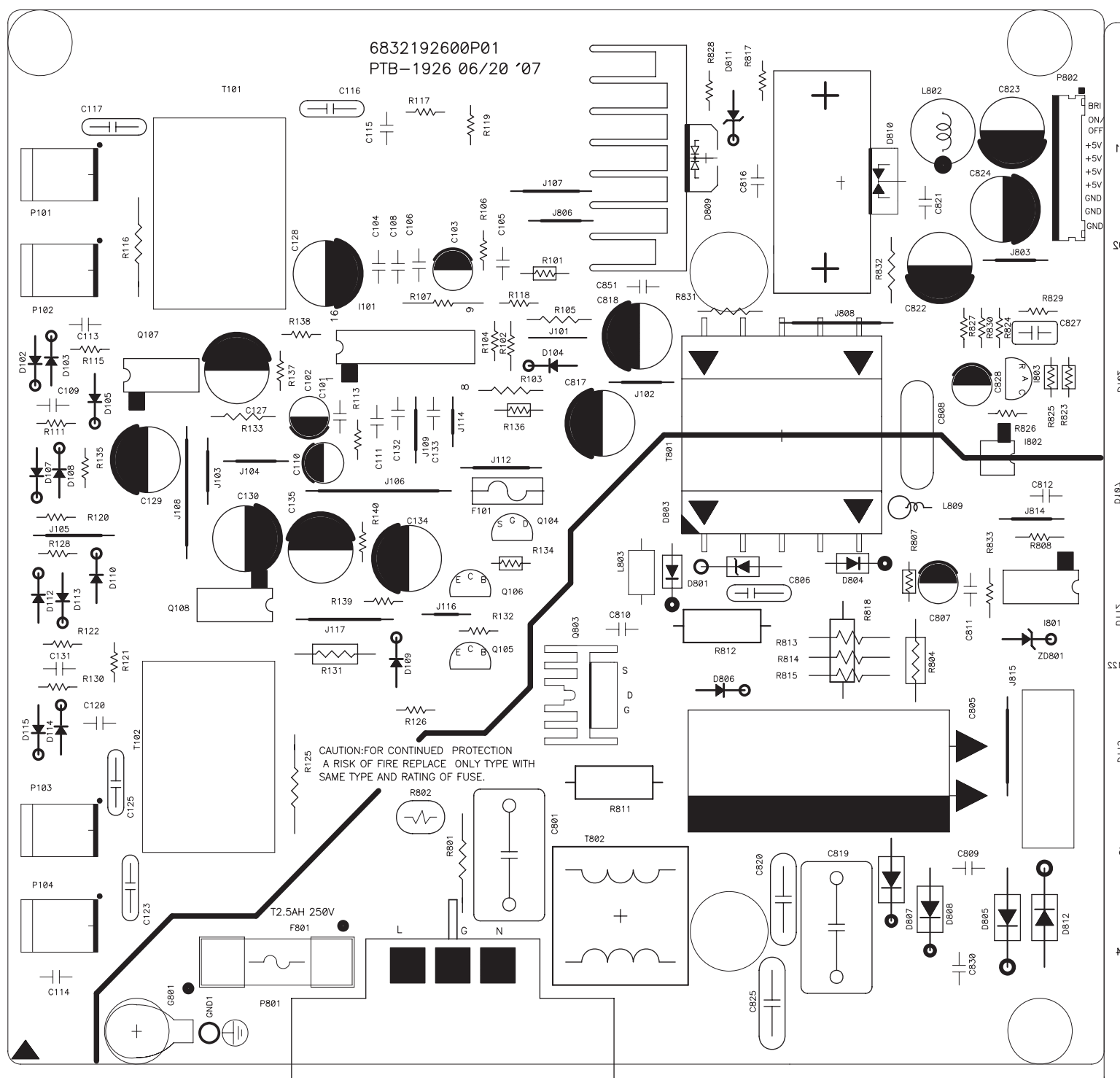
6.8 ACER_LCD_X223W_SCHEMATICS_FUNCTION _KEY



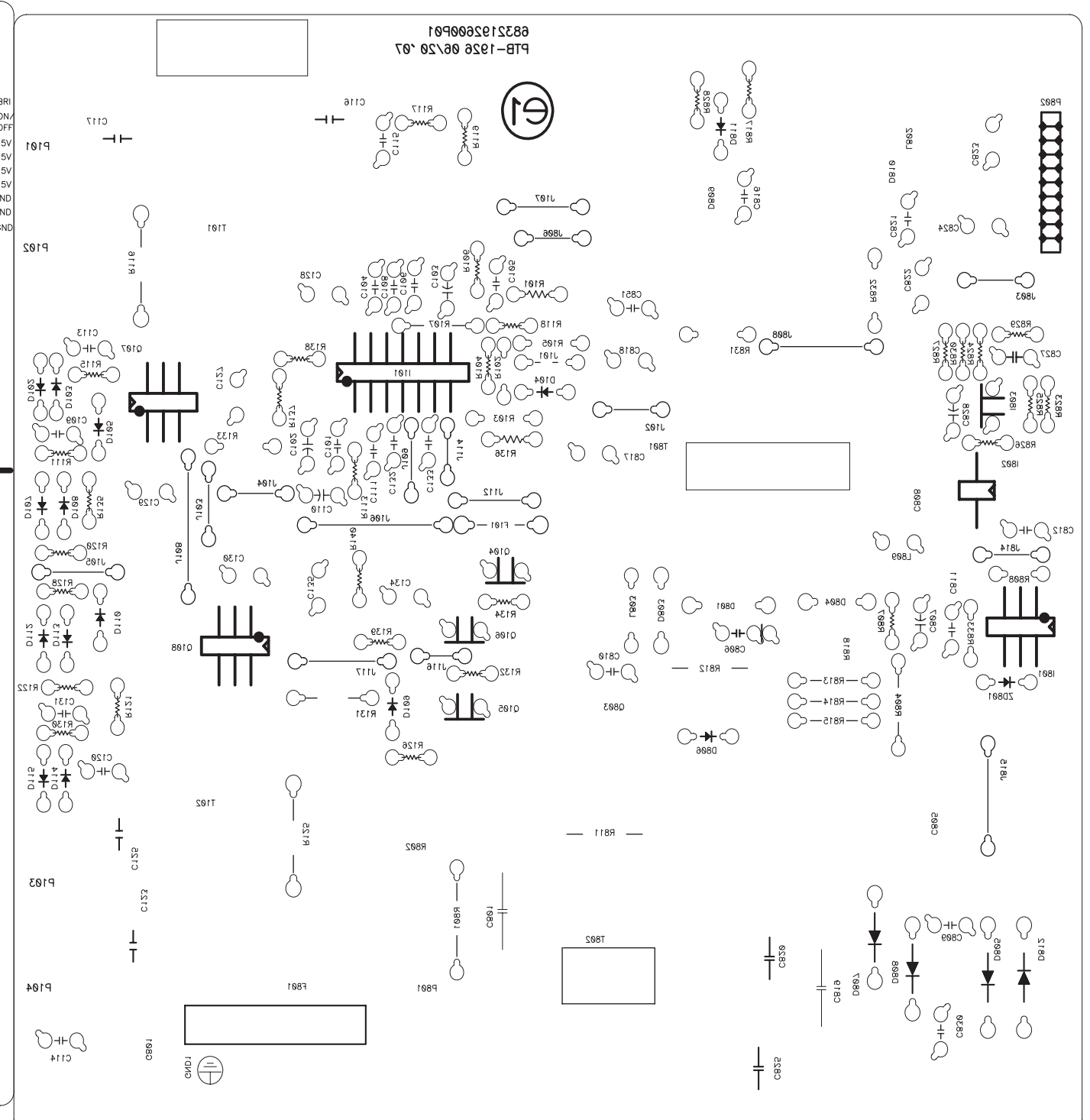
PCB No. 6832192500P01

6.9 ACER_LCD_X223W_LAYOUTS_POWER BOARD

POWER BOARD - TOP SILK

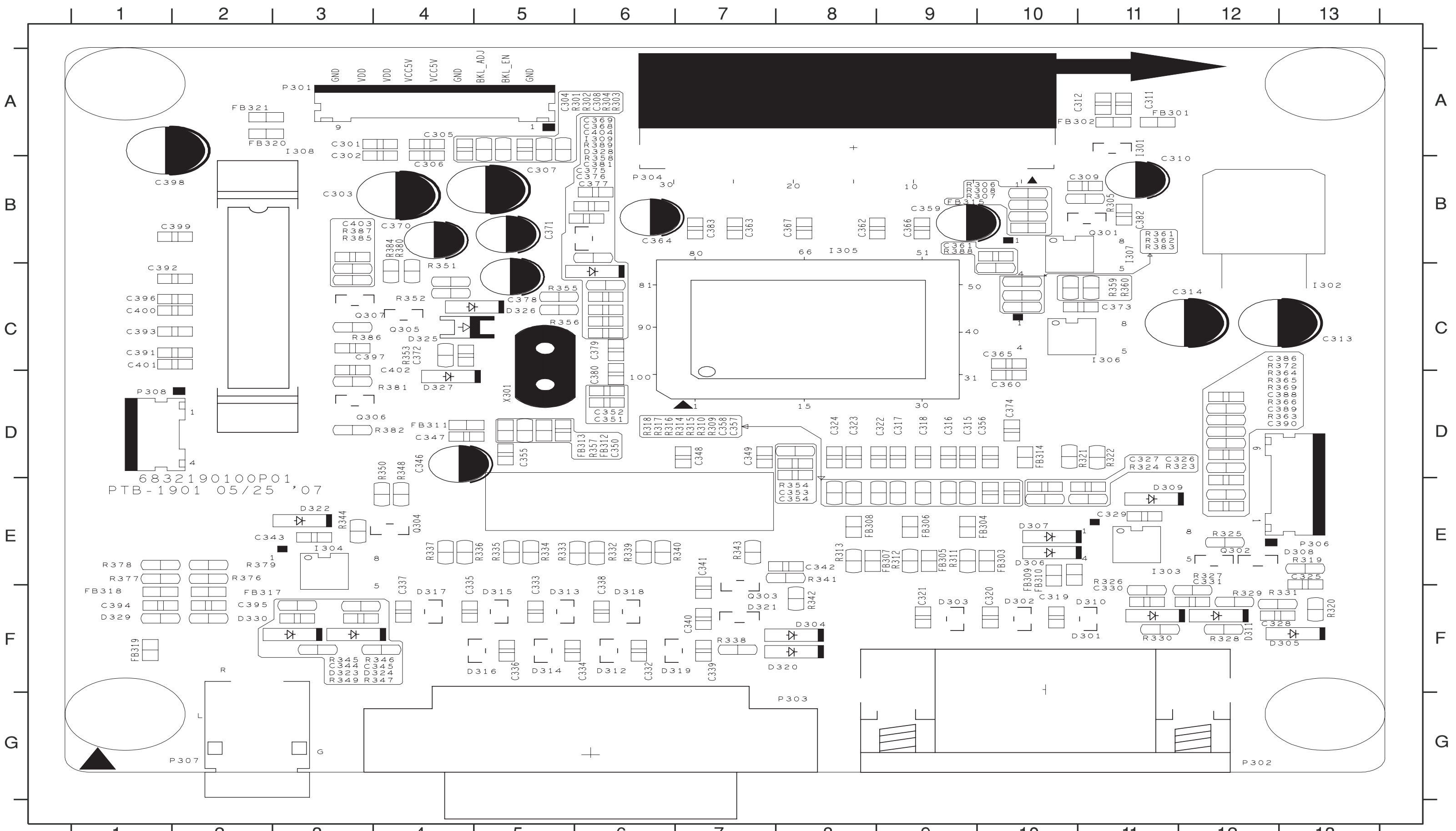


POWER BOARD - BOTTOM SILK



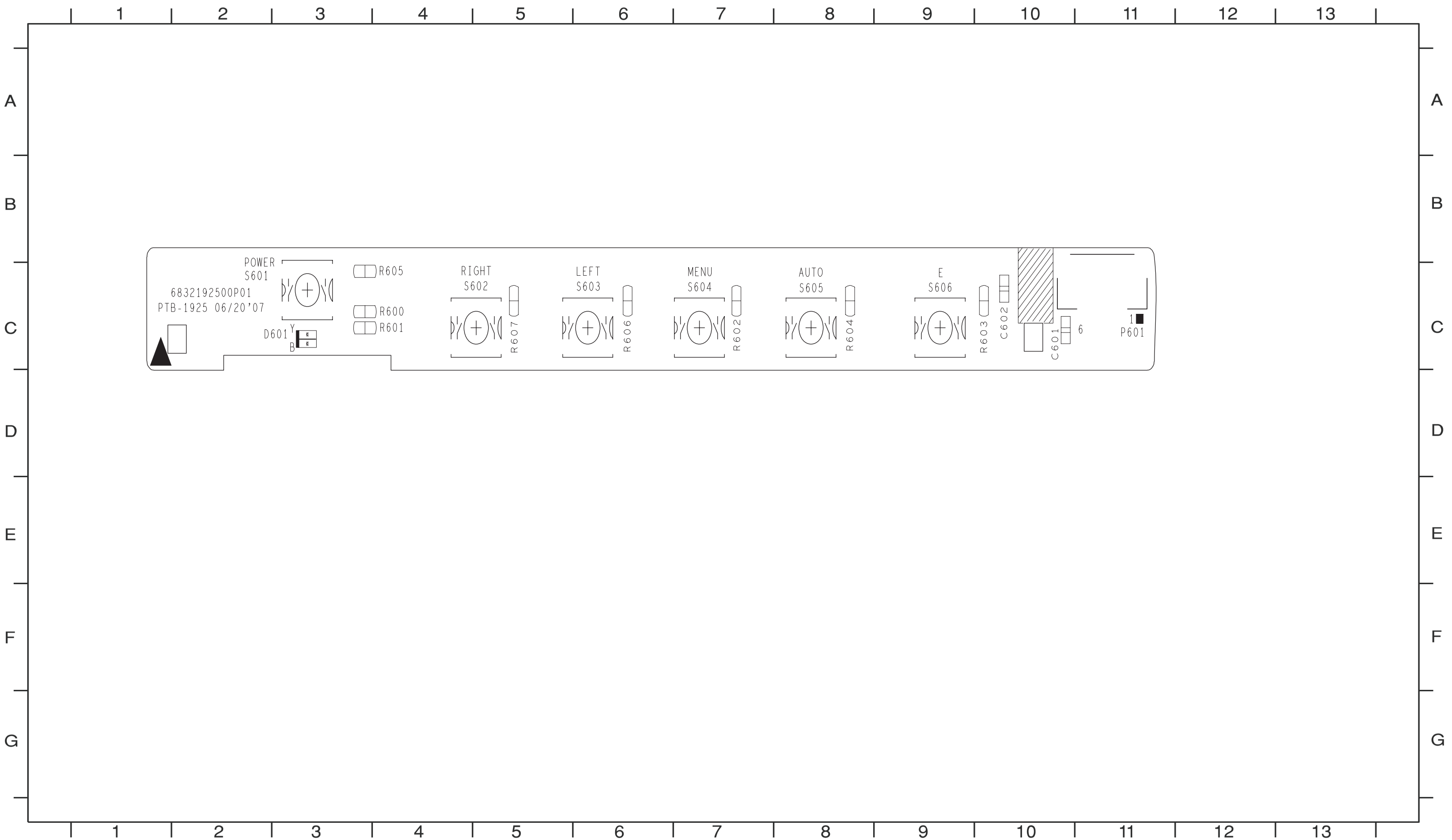
PCB No.

6.10 ACER_LCD_X223W_LAYOUTS_INTERFACE BOARD



PCB No.

6.11 ACER_LCD_X223W_LAYOUTS_FUNCTION KEY BOARD



PCB No.